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THE SECRET OF THE OLD MASTERS

BY

ALBERT ABENDSCHEIN

D. APPLETON AND COMPANY
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1927

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PREFACE

In this little book I have undertaken to lay before the reader the fruits of the labor of twenty-five years. As soon as I could understand and appreciate the splendors of the Grand Masters of painting, I had begun to form a determination to discover the technical principles, methods, and material that enabled the Masters to produce their work. Years ago, I never had any real satisfaction when I did paint a fairly good study head, because I felt instinctively that it was in no sense related to the technic of the Masters. Therefore, the search for the Masters' technic became for me an all-absorbing life work to the exclusion of all else. This life work was more or less an injury and loss to me in many ways. On the other hand it had many

compensating pleasures. I had said to myself in the beginning: "If I can only paint one head with the Old Masters' technic I shall be satisfied." Had I known how long it would take me to solve the problem, I certainly would not have attempted it, but as the years passed I felt less like giving up than I might have at the beginning. As I proceeded on my way in the search I met many that had lost themselves, or fallen by the wayside. I feel now that I ought to make public my theories and conclusions, so that the younger and stronger enthusiast may make fuller use of my discovery of the "Masters' Venetian Secrets." He will be better armed to fight his battles, hard enough in any event without this lifelong technical thorn in his side.

The Old Masters' technic always has been enveloped in mystery and confusion. I think I have brought some order out of the confusion and considerable light to bear upon the mystery. I do not presume to tell the

reader how he shall paint, but I am glad to be able with some show of authority, as I rest somewhat spent by the wayside, to point out to him in which direction the Masters have gone over the horizon. Should anything in this book bring success, lighten labor, make results more beautiful, certain, and permanent, then I shall not have labored in vain.

A. A.

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THE SECRET OF THE OLD MASTERS

CHAPTER I

INTRODUCTION

In reference to the Old Master's technic, in his book the "Graphic Arts," edition of 1886, Hamerton says: "It is wonderful that so little should be known, but it is the more wonderful since eyewitnesses have positively attempted to give an account of the Venetian methods and stopped short before their tale was fully told, and that neither from inability nor unwillingness to tell all, but simply because they did not foresee what we should care to know about, or else took it for granted that we should be inevitably acquainted with all that belonged to the common practice of the time." Hamerton thus confesses his

lack of knowledge on a subject that formed the greater part of his book. It further indicates the general knowledge among artists in England and on the Continent up to that time.

In January, 1891, the following little despairing note came to a New York paper from Paris, the greatest productive center of paintings in the world: "The members of the French Society of Artists are pondering upon a proposed abandonment of oil colors and brushes in favor of some more permanent mediums of preserving their works for posterity. Detaille, Bouguereau, Robert Fleury, Vibert, Saint-Pierre form a committee of investigation. One expert, Gabriel Deneux, proposes a system of encaustic painting by which hot irons would be used instead of brushes. The work, after being branded instead of painted, would have to be treated chemically. The conservative painters, however, hope that some improvement may be attained in the mixture of colors in which

such a radical innovation as cautery will not be resorted to." This indicates plainly that the best-known artists and teachers in Paris at that time (1891) were somewhat at a loss as to how to paint soundly or durably. They were all fine artists and painters, but they were aware that their system was somehow not that of the Masters. Then, in 1893, Vibert published his book, "*La Science de la Peinture,*" in which resin with petroleum is announced as the true medium for painting (of which more anon). Again, in April, 1904, we have this anent some work exhibited in the Salon: "For some time past, X, like so many of the greatest living painters, has been dissatisfied with modern methods of technic. He argues, as I have heard other great painters argue, that the art of painting has been lost; that while the artistic instinct and the intellect of the painter are just as great and keen as ever, he is no longer in possession of the same means as the Old Masters. He does not prepare his canvas in the same

way, nor build up his pictures as they did. He knows well enough what he is aiming at, but not how to attain the end by methods which are at once solid, masterly, and lasting. A profound study, a minute technical dissection, as it were, of the greatest works at the Louvre, have revealed secrets to X which have made him the pioneer of the most brilliant modern retreat to the ideals of painting pursued by such giants as Rubens, Velasquez, and Franz Hals. . . . The actual painting is that of the Old Masters . . . a thin 'jus de couleur' over an elaborately developed 'grisaille.' . . . But Rubens has merely guided X's brush. There is no slavish imitation in the young French master's work." These quotations can give but a faint hint of the number of men who have knocked on the door of the Old Masters' painting room to be admitted to their technical secrets. Through the centuries there have been a few admitted, hardly more than a dozen perhaps. And so every earnest art student, if the Old Masters' great

work has any influence on him whatever, in time is confronted with the problems purely of technic, apart from the problems of drawing, painting, and composition. The selection and use of colors, logical methods, mediums, varnishes, and grounds to paint on remain perplexing questions even to eminent artists, as we have seen. Considering the enormous amount of painting done it is amazing that so little is known on this subject. Drawing, painting, and composition are, in modern times, freely taught in many countries, but I have never heard of the real technic of oil painting being taught anywhere. Every student and artist picks up his knowledge about the technic of his art wherever and however he can. It is mostly chance, guesswork, a friendly hint and some experience that finally weds him to some manner of painting, some favored colors, and some favored canvas. It is only within a few years that the quality and durability of colors has become generally questioned, and some dis-

crimination in their use become evident on the part of artists. Still, this discrimination has not advanced much beyond the acceptance of the ochres and the rejection of aniline colors, most artists knowing enough not to use them when they know them to be such. Every new and loudly heralded make of material is hopefully taken up and tried, and as sadly laid away again, while the same old feeling of uncertainty and perplexity remains. If any artists have hit upon what they considered the real and only technic, they have, like Sir Joshua Reynolds, kept it carefully secret. I once asked a friend in Munich, who had many years of experience in painting, what medium or vehicle he used to dilute the colors on the palette, and he said, "balsam copaiba, spike oil, with a little wax melted in," adding the usual injunction, "don't tell anyone." I thought at the time the injunction showed a narrow spirit—I had heard it before, and have often since, but when I found by my own experience that it

took a great deal of time and study to invent useful and beneficent things, I became somewhat reconciled to the idea.

The one distressing thing about my search for the true technic of oil painting was, that even with an exhaustive amount of experimenting and with notebooks, it was impossible to come to any positive conclusion without the necessary lapse of considerable time. And if the reader will have the patience to follow me through this little book, I hope to prove to him beyond the shadow of a doubt that the conclusions I have arrived at are the only logical ones, and that the principles of the process described are those of the "Grand Old Masters" and no others! I am very well aware that many more or less eminent men have in the last three and a half centuries sought for and claimed to have discovered this precious process; that many theories other than the ones herein contained have been advanced by able artists. Their theories have been for a time, to a great ex-

tent, accepted, but in no case have such theories been sustained by any conclusive evidence, proof, or facts that could be accepted by any logical mind. The theories were all more or less built up on dogmatic assertions. Some inspiration like the petroleum theory would be seized, and an attempt made to fit it in with practice. It would be asserted that the Venetians painted with petroleum, because a vague tradition says Correggio once made a varnish of it! The great difficulties in the search lay in the strange fact that an artist may have found a part of the principles governing the true technic, and yet not know it positively until he had proved it, and by elimination disproved all theories that came in conflict with it. This in course of time even necessitated going over the same ground, and many times experimenting around a circle back to the starting point, and in my case has covered a period of twenty-five years. Many times I was "stuck," to use one of Thomas A. Ed-

ison's expressions, not knowing which way to turn to go forward, feeling that the labor of years was thrown away. Then I would try to dismiss the whole subject from my mind for a short time, to find at the end that a new path was revealed that led to final success. The very simplicity of the problem made it so baffling, like looking for an elephant where a mouse should have been expected. One of the great stumbling-blocks to a quick solution of the problem was the well-nigh universally known fact among artists that oil in a picture darkens and yellows it to the verge of destruction. No one seemed to be able or willing to give any help or advice. Some years ago I heard one prominent artist say that "experimenting was dangerous." His work painted at that time has since reached the dark yellow, and some the brown, stage, all its former charm having vanished. Other capable artists when questioned, revealed on this subject the ignorance and innocence of children. I even knew of a French painter,

a former " Prix de Rome " pupil painting a picture with colors mixed with vaseline! But it did not take him long to discover how unwise this was, for his work never dried, and had to be repainted. And of other painters using equally silly material, there are many. Chemists have been appealed to from time to time, but, excepting in regard to a few colors, have not been able to help us out. The cause of this was not far to seek, since they were not artists and could not know or understand our wants; but, on the other hand, the artists did not seem to solve the problem either.

Without going into the history of oil painting here, let us ask, What is the logical course to follow in establishing true oil-painting principles? It is obvious that the best and oldest we know of in oil painting must be the subject of our investigations and should guide us, and that best must have stood the test of time, not of fifty or one hundred years, but of centuries; the older the better, provided the technic is also combined with excellent drawing

and fine coloring. Therefore, as we look back in the dim past, the works of the Grand Old Masters—Titian, Paul Veronese, Velasquez, Rubens, Van Dyck, Reynolds—must be the source to which we must travel to gain knowledge. There are a few others who belong to this grand company, but only those will be referred to who will best serve our present purpose. Now we must bear in mind that most of those men during their lives had two or more ways of painting, a fact apparent even to the unprofessional eye of the art historians. Even the Masters had to go through a period of evolution. We must choose that which is of undoubted authenticity and has necessarily stood the test of time. This means that it was interesting and attractive enough to have escaped the attic, museum cellar, or scrap heap, and, last and most important reason for our purpose, stood the test of atmospheric changes—light and darkness, removal from place to place, revarnishings, etc.; and further, *its very existence proving that at its*

birth each work had a sound physical constitution.

The causes of decay of oil paintings are very numerous. Many are foredoomed to early decay before they leave the artist's easel, because, although the artist may have been a great artist, he may not have been an equally great craftsman, and exercised the wisdom and care necessary for the production of great and lasting work. Some modern painters have affected to despise any discrimination in the selection of materials and method as being inartistic and beneath them. And when artists do seek for light on technical matters, they soon find, as did Sir Joshua Reynolds, that there is no one who can teach them, and so they go a short and uncertain distance in what seems an endless and uncertain path of experimenting. They soon satisfy themselves with one or two formulas that seem to work well, and with that they are apt to remain content, and keep on producing paintings attractive enough at the time they

Decay of Paintings

leave the easel, but soon becoming uninteresting, and forming part of that great procession going "down and out."

Some of the causes of decay in paintings for which the artist can be blamed are, first, an unsound canvas ground, one improperly made. On such a canvas the greatest genius's work is bound soon to yellow, blacken, crack or peel off from the ground and from the threads. Without mentioning a poor quality of linen, the principal cause of the ground peeling from the linen threads is inferior glue or improper application thereof to the linen. Upon decomposition this causes the peeling off of the ground, exposing the threads. Next the ground itself, the surface the artist puts his work on, may lack every essential of permanence or even of logical use. (On this subject of grounds I will have more to say later.) The Old Masters were in this, not only logical, but scientific as well, nothing being left to chance or haphazard. Method and order were instinctive, and the phrase "any

Artist Blamable for Decay

old thing is good enough to paint on," so frequently heard from modern artists, would to them have been a species of artistic heresy, a ground being to them fully as important as the painting itself, not merely from the view point of permanence, but as a factor in the completed picture. This was particularly the case with Rubens, the greatest of all technical painters, and his equally great pupil, Van Dyck. When we leave the ground to consider causes of decay or deterioration, we enter a boundless field. Let me enumerate just a few. First, insufficient drying of first sketches or paintings, and the same for second or any succeeding paintings. I will show later how important this appeared to the Masters. Second, absurd mediums, vehicles, or combinations in which there could be no chemical union; unclean, stale paints, wax, adulterations, dryers, magilps, etc., were all a fruitful cause of deterioration. The commonest of all causes of deterioration is a medium made up of two, three, and even four or more different materials,

where one of them is sure to destroy the effect intended, in time, and if the other two or three should in themselves carry no injurious consequences, their combination is sure to bring about final destruction. And furthermore, the immediate effect with such combinations is rather attractive, and so such pernicious concoctions make lifelong slaves of some artists, and they never get out of the habit of using them. During a period of more than twenty-five years I have experimented with very many of them, and it would not serve any good purpose to go over them all here. Suffice it to say that the artist is to blame in nearly all cases for the darkening, excessive yellowing, cracking, peeling, and premature decay of his painting. Owners of fine oil paintings, as a rule, take tolerably good care of them, but when they begin to darken they are apt to go to the restorer, or even the framemaker (!), and to have them clean the painting, which means a kick down the hill for bad ones, and a start downward for good ones

that may have only a little ordinary grime on them through neglect. There are few artists who prepare their own canvas and grind their own colors. The paints and canvas ordinarily used are at the present time made by large firms, and sold as other merchandise. This is a very convenient proceeding for the modern artist, but it produces bad pictures in most instances.

Technical Copies of the Masters

The Old Masters had the knowledge, experience, and wisdom to produce great work, considered from every standpoint, and it is necessary in establishing, or rather reëstablishing, a sound system to study their work. Many great artists have studied the Old Masters for technical guidance, and have done so by making copies, reproducing, not the aspect alone, but the method and the "handling," ground or surface on which the work is produced, and character of material throughout. Thus Velasquez himself copied Tintoretto and Paul Veronese, and it is well known that Rubens and Van Dyck, as well as

Sir Joshua Reynolds and many other great and lesser artists, have made many copies of Titian's paintings and of others of the Venetian Masters. Much of this work was so well done that it now passes for the work of the painter of the original, and sometimes the original is regarded as the copy, as happened to Holbein's Dresden Madonna. In modern times a copy is condemned without a hearing; in the old days a copy was appreciated with the original, if it was equally well painted. There is no doubt that when the above-named artists copied a picture it was done to study and analyze everything there was in it—composition, drawing, color, technic, ground, method, and probably medium. We know these copies were sometimes highly prized by the artists themselves.

CHAPTER II

THE MYSTERY

In copying a fine Old Master in a good state of preservation we strike at the outset mysterious obstacles if we attempt to make a copy by using the modern direct method of rendering each color and tone as nearly as possible at the first touch. By mixing any colors, the true, or even approximate tone or color, is not reproduced with equal transparency and luminosity. The obstacles seem almost insurmountable. One of the first things encountered is a transparency and wealth of color to which our methods and material seem crude, heavy, and opaque. At once the thought would occur that the effect in their pictures was more the result of time, but that is the

case only in a very small degree, so well proved by the pictures of Rubens. Some of them in Munich are as fresh as though they had just been painted. This is also the case with the Van Dycks in the same gallery. This, then, brings us face to face with an unknown quantity. Did they use different material from that in use at the present day? If so, what did they use? The "glow and richness," Sir Joshua Reynolds said of Rubens' coloring, "is that of a bunch of flowers!" Was it produced by varnish and luscious magilp? Perhaps; why not? But where is the proof? Every material fact should be susceptible of proof before we can here accept it as an axiom to build on further. But as my Munich instructor used to say, "Gentlemen, it is difficult, but there is no witchcraft in it," and to solve the problem I proceeded to experiment in varnish alone as a medium.

Among other experiments, I painted an entire life-size head on an absorbent ground, that is, zinc white and size, the colors and

medium being without a drop of oil in the entire picture, and solely with varnish! If any of my readers have struggled through a similar problem they can afford to smile. The transparency obtained was beautiful, but the difficulties were tremendous, and I have no hesitation in condemning the process as not that of the Masters, on the ground of impracticability, that is to say, a very slow, costly, tedious, and extremely difficult process. I felt convinced the Masters could not have painted thus, because for each man to have produced as much as he did, he would have had to be reincarnated five or ten times, and even then the freedom of their work would have been in this method impossible.

Varnish Painting

The next question in the problem was, could it be some other varnish? After more experimenting I came to the conclusion that any varnish whatever would have precisely the same objections, although slightly differing in the handling on account

Varnish and Wax, or Encaustic Painting

of more or less rapid drying, and becoming gummy and sticky. Then I tried the incorporation of wax with the various varnishes to retard the drying and allow some freedom in handling. Wax with Venetian turpentine, wax with amber, wax with mastic, wax with dammar, wax and copal, wax and balsam copaiba, wax and oil of turpentine, and other varnishes in like manner in very many varying proportions, and, when possible, in cold combinations, that is to say, a close union was obtained when possible without resorting to heat. Spike oil or spirits of turpentine were used with most of the above combinations more or less. Wax was chosen as an inert neutral body to retard rapid oxidation or evaporation, and on account of its transparency when used in a comparatively small quantity. It also had the additional advantage of eliminating the glassy surface of the varnish. The wax also had the property of giving a body to a color or medium without itself imparting any noticeable color. All

these combinations, be it understood, were used with color without any oil whatever. In due time I found that if the proportion of wax was large enough to retard the varnish, to enable a modicum of deliberation in handling—as in ordinary oil painting—and give time to draw, color, and model with any degree of accuracy, the paint, although the effects were sometimes beautiful beyond anything possible with oil color, was entirely unsuitable for first use on the clean canvas and for intermediate layers. It would often remain in a semi-dry state for days and days. And with the application of heat to force the drying, the results were apt to be startling. Either the varnish sank down with the color, and even shifted, or the wax arose to the surface, giving its semi-dull sheen, and producing a spotty surface. Then again the varnish arose to the top and gave a disagreeable glassy surface. It was almost impossible to proceed when body colors and white were necessary, not to mention a decidedly pronounced tendency for the paint-

ing to become quite yellow and darker all over, and the fine delicate gray, violet, and pearl carnations to lose their original beauty in a very short time.

All this proved that the Masters did not paint their pictures with pigment and medium composed solely of color substance mixed with varnish. Some of the effects obtained, namely, those with the Venice turpentine and wax, were very beautiful for final paintings, glazings, or semi-veilings of flesh tones, such as Sir Joshua Reynolds was so fond of producing with the same material. It was charming, but alas! the effect or aspect would not remain as painted, and in a comparatively short time become yellow, darkened, cracked, and otherwise deteriorated. In the above tests I had added more or less spirits of turpentine as a diluent or solvent and then, when a slower evaporating one was necessary, the turpentine was replaced by spike oil. Even then the "drying" that took place on the palette and brush was so rapid that there was

no such thing as free and deliberate painting with its attractions as observed in the Masters' works. Beautiful chance effects, were of course, obtained, but if an attempt was made to follow nature, as in a portrait, the time required to find a correct tone, as in ordinary oil painting, was necessarily increased, and the handling was also extremely difficult. On its face, the Masters had no such difficulties to contend with. Combinations of resins or varnishes with wax, mixed with colors, without any oil, were therefore condemned as not feasible.

I then proceeded to make tests with these resins and wax plus the colors ground in a little oil. In the actual handling of the various resins named there was not much difference, excepting in the greater or less elasticity or hardness and softness. Venice turpentine and balsam copaiba are the softer, while dammar, mastic, amber, and copal are in a class by themselves, though still differing much from each other. Speaking

Resins or Gums

of resins from an artist's standpoint, one of the greatest difficulties in connection with resins in the dry state is the total lack of any standard quality, excepting as to more or less mixture of foreign matter, the clean resins being simply selected and possibly washed. If, for instance, of a given resin, say copal, a package of selected was bought one day, it was quite likely to be very different in its physical properties from a package of selected copal bought from the same house six months later. This condition of affairs I found could not very well be changed, since the largest buyers have the same trouble, and hence the " deviltries of varnish " have become one of the expected trials of the making of commercial varnish for ordinary purposes. The only way, it seemed to me, was to get the best resin possible from a reliable house and make the varnish, and afterwards subject it to the required test to ascertain if it fulfilled all the artist's demands, viz., transparency, proper drying, " remaining inert " and not

contracting violently (so that the paint underneath, being in time perhaps a trifle less dry and in a softer state, should not be torn apart and cracked), and last, but most important, its durability should be beyond question. The tendency to get yellow and change in color I found was strongest in the more elastic varnishes. That tendency of all varnishes to darken, I had come to believe was caused by the rapid filming over but slower drying, and especially the lack of thorough drying "au fond." Ordinarily most varnishes will dry in a way, but only on the surface, and sometimes the warmth of the finger placed for a moment on the surface will reveal the sticky state underneath, which, of course, unless it is a final varnish, is very bad for any further application of oil colors or varnish colors viewed from the standpoint of durability. I have further been impressed with the fact that of the various varnishes named, one was more valuable to the artist than the others. Mastic when first used is

beautiful, but when a painting needs to have its varnish removed on account of extreme yellowness and semi-opaque state, it is usually found to be mastic. Its propensity to get quickly yellow and deteriorate is undoubted. Before its volatile part evaporates entirely it becomes yellow, the remainder soon loses its cohesion, and very minute cracks appear producing opacity and discoloration. These characteristics are common also to most other varnishes, but in markedly different degrees. Dammar will remain in a good state a much longer time and then suddenly begin to deteriorate. Venice turpentine has a still greater measure of instability, with the added disadvantage that when it is bought in the open market it is in a semi-fluid state, but very thick, slow-moving, and is almost always subject to adulteration, which vitally changes its normal character. Amber has the same characteristics as mastic, and is somewhat too viscous and glassy. Balsam copaiba is bought on the market in a semi-fluid state similar to

Venice turpentine, though not quite so thick, and is subject to adulterations to almost the same extent. Its propensity to become yellow is even greater than mastic, and some kinds have a strong tendency to turn yellow on exposure to strong light, which is probably due to the presence of acid, and is a very serious fault.

Copal

Of all the resins that go to make up varnishes, that known as copal, it seems to me, offers the best material for artists' use. There are quite a variety of resins under the general name of copal, from the very hardest, toughest kind—which has almost a metallic ring when struck in the dry state, and known as Zanzibar copal—to the elastic and at the same time tough Sierra Leone copal. There are many other kinds and qualities, and no doubt each importation varies somewhat from its predecessors. The Sierra Leone copal of the very best kind is very scarce and much the highest in price. It is said by the eminent French painter Vibert, in

his book "*La Science de la Peinture,*" that real copal does not dissolve in anything that will not destroy it unless great heat is used, and then the very high temperature necessary destroys the copal and leaves only an ordinary resin, which no longer has the characteristics of copal. I have on many occasions made a fine copal varnish by placing the copal gum in alcohol and leaving it alone until such time as it would dissolve, with occasional shaking and placing in the sunlight to accelerate the dissolving of the gum or resin. This, of course, was a very slow progress, as in the first trial of this method it took over a year to dissolve and in another only three weeks, but in both cases the varnish was quite clear, transparent, and dried very well.

Turpentine, Spike Oil, and Benzin

The essential oils of turpentine and spike oil are, as is well known, a prolific source of blackening when used to any large extent in oil painting, especially the turpentine. The spike oil is very rarely pure. If the freshest, newly rectified turpen-

tine be used, and quickly and thoroughly dried on the painting, it does not perceptibly darken, but as soon as a part is removed from the bottle, that which remains begins to thicken from contact with the air in the bottle, and then its further utility is impaired, viewed from the standpoint of durable transparency. Benzin may be classed with these, but it evaporates too rapidly to be very useful except as a diluent for oil, and as a constituent of some varnishes.

Petroleum

As before stated, there has been a book written by J. G. Vibert, the noted French painter (" *La Science de la Peinture* "), having for its especial object the introduction into oil painting of various oils produced from petroleum. Colors were placed on public sale some years ago by a manufacturer which were ground in petroleum alone. The colors ground in petroleum alone cannot possibly be durable, leaving aside a question of taste as to their use from a purely artistic standpoint of " handling," and action under

the brush, on the palette, and on the canvas. The petroleum in time is sure to evaporate or crawl, and sneak away in its well-known manner, and what then is to unite and hold in place the particles of color? M. Vibert's theory holds that the color should be ground in as little oil as possible and then diluted on the palette with what he terms normal resin dissolved in petroleum of a certain degree of evaporation. Now there are in commerce some varnishes made of benzin, naphtha, and other volatile parts of petroleum in combination with resins, but these varnishes are generally intended to be applied in one broad, even application, and when an addition of oil is made in a cold state, do not give such good wearing results, the appearance soon becoming spotty and streaked. The normal resin and petroleum of Vibert intended to be used on the palette with the brush, every artist will admit at once is but mixed with the color as it suits the eye of the artist, and no rule or theory of mixing is adhered to. Some colors

may be applied to the canvas with no normal resin petroleum mixture whatever, while some may be applied with a very large percentage of the Vibert mixture. It follows then that a very uneven and I may say accidental drying takes place; the parts having most normal mixture (if I may be allowed the expression, with all due respect to M. Vibert) will in time be subjected to the largest percentage of evaporation. If the mixture is such as to permit perfect freedom in handling or brush work, or, as he says of similar action on the palette, to oil itself, the proportion of evaporation is materially enhanced. Here then we have a picture whose surface is made up of resin and oil in some parts and oil alone in others. The drying or hardening can proceed in anything but a normal manner; the parts of resin and oil will be more yellow and less durable in time than the part having a small quantity of oil alone. This difference, however, would not be so serious if it were not a question of durability, for *the*

resin dries out and loses its cohesion, especially if it has been previously dissolved in some form of petroleum.

From my own experience alone, a pure turpentine varnish is worthless, since as the turpentine evaporates it loses its elasticity, and with the loss of elasticity there ensues an increase of evaporation caused by the separation of the particles and producing minute cracks, one effect causing the other, with a final total disintegration of the resin. But, nevertheless, turpentine has a far greater binding power than petroleum, for it is itself a poor quality of resin in a liquid state. So what can we expect from a medium whose binder is petroleum? I will answer, if the oil has been displaced to any appreciable extent, the destruction is inevitable!

In a recent New York paper appeared the following significant item: "M. Vibert has been an earnest student of the technical scientific side of painting, especially concerning the question of permanency in colors. For

years he was the leading member of the commission which had charge of the restoration of art works in the national museums of France, and he gave a famous series of lectures at the École des Beaux Arts upon the chemistry of colors. His manual upon the science of painting is recognized in French studios as an authority. It would be sad, indeed, should Vibert's cardinals ever lose their gorgeousness, and it may comfort their present owners to know that the artist considered them good for at least a century, whereas he believed, 'that many pictures of the present day will fade into insignificance before they are fifty years old.'"

Oil

The next step in the search for a true vehicle and medium, after the condemnation of the wax and resins and the rejection of the petroleum combinations, was the retention of the resinous principle and the substitution of some substance to take the place of wax. The very obvious freedom of the brush in the work of the Masters forced

the conclusion that their mediums must have contained some substance at once soft and oily during the handling and work; hard, tough, and transparent after good thorough drying, and, above all, moisture-resisting and very durable. Though fully aware of the bad reputation of oil, I took up a series of experiments with the hope of effecting a combination that would neutralize its injurious character.

The first mixture is naturally oil with some resin or varnish.

CHAPTER III

THE THREE OILS

While on the subject of oil it may be useful to note some of the constituents and character of the oils used generally by artists, as ascertained by the noted German chemist, Pettenkofer. Without entering into the chemical details, in a general way it may be stated that of the three oils—linseed, poppy, and nut oil—linseed contains a higher percentage of the "linolein" or real working and durable part of the oil. The proportion of "linolein" in linseed is eighty per cent, in poppy seventy-five, in nut sixty-seven, according to Pettenkofer. The other twenty, twenty-five, and thirty-three per cent respectively of the oil constituent is a mucilaginous substance, and in proportion to its presence in quantity is

deleterious and injurious. It produces opacity and hinders a quick drying. In my judgment the manner in which the oil is expressed from the seed is the important part. If the seed is pressed too hard, as seems to be the rule nowadays with hydraulic presses of great power, the ground linseed meal being constantly in direct contact with steam, it is not surprising that the undesirable substances are expressed with the oil. It seems to me that the old, slow Italian process is the best, where each artist made his own oil from the seed by a slow water process with the aid of the sun, without steam or pressure, and without the mixture of injurious chemicals. This is the safest kind of oil to employ. But if pressure must be resorted to, it should not be so excessive. The oil itself varies in the same seed, supposing all the time you have the best, full-grown, ripe seed. The first pressings are the best. The difference in color is the only thing to make some artists favor poppy oil in preference to linseed, the poppy

oil being so much whiter and more transparent; but in this case things are not what they seem, as in time the poppy oil gets darker and yellower. In comparison to linseed and poppy oil, I do not think nut oil should be used when either of the former can be had. The choice should always be in favor of linseed as between linseed and poppy, because the former dries throughout better, does not increase its volume to the extent that poppy does, and, lastly, gives a less viscous surface.

Oil and Resin, or Magilp

As I said before, the next step in the search was naturally a mixture of resin, or varnish, and oil. The defects involved in such mixtures, applies to all three oils, only increased or diminished by the greater or less amount of mucilaginous substances each oil contained, so I will refer only to linseed oil hereafter when oil is mentioned. Oil, when added to a resin and used as a medium or vehicle with the brush on the palette, does not combine and form one homogeneous substance for our purpose unless subjected to

boiling. Then our oil has become also a new kind of viscous varnish. Now you have raw oil in your colors on the palette, and a varnish to spread or dilute them with, but the oil in the color not having been boiled remains apart, and the varnish remains by itself. On the picture the varnish dries on the surface, and your oil, undried, remains underneath and becomes very yellow and dark. I have some tests of this kind, over fifteen years old—where the combination was of resins and oils without any coloring matter added to complicate the process of drying—that have turned as dark as raw sienna with some asphaltum added! Just think of it! supposing a color tone of light, tender, silvery carnation, such as we find in the nude and in the faces of women, were mixed with this medium. What would become of the color, I will leave to the reader's imagination. These tests were mostly made up of raw oils and boiled oils, and oils thickened or thinned in various ways—oil and mastic, oil and dammar, oil and amber, oil

and copal, oil and Venice turpentine, oil and balsam copaiba, oil and other resins.

The above-mentioned mediums were in addition tested in conjunction with the essential oil of turpentine, benzin, and oil of spike, in varying quantities. The possible proportions of the elemental substances are almost unlimited, as I discovered with the simple combination of the three, oil of turpentine, wax, and Venice turpentine. Of these three I had made a great many combinations, because I had good reason to believe that Sir Joshua Reynolds had made a very extensive use of them. A mixture of balsam copaiba, amber varnish, linseed oil, and turpentine had been recommended to me at one time on quite respectable authority, but it did not take very long to demonstrate its utter worthlessness, and the childlike credulity and innocence of technical knowledge of the quite extensive circle of artists who made constant use of it. The tests were always made on a pure white canvas made by myself, whose

component parts I could rely upon, and which had been previously tested as to stability and purity. The tests also embraced every combination of any of the above-mentioned ingredients I could think of, but I soon learned that it was better to keep the number of substances as few as possible, so that their character could be more easily noted, and any characteristics increased or modified as the technical brush handling demanded. When I thought I had found the real medium I generally painted a head, and some changed color so rapidly as to suggest that they were ashamed of themselves. One profile head of a lady turned out so well in every way that I was immensely pleased, but after about one year I suspected that the study was becoming yellow, and when suspicion afterwards became a certainty I felt very much depressed. Speaking of the yellowing reminds me that I nearly forgot the substance sometimes used by some artists as a quick-drying varnish which turns a strong

yellow as soon as anything employed in painting, and that is the white of egg. No more need be said about it. All the mediums thus far mentioned were found wanting in stability. That is, primarily, in not retaining their original colorless transparency as at the time when first applied, and turning yellow was a very common serious fault, without taking any further account of blackening.

Oil Alone as the Medium?

The varnish having failed us, and varnish with other ingredients, we must turn to an exhaustive examination of our old friend, oil alone; that is, without any other substance whatever added. It is quite generally known that oil alone darkens and yellows. It needed no very extensive tests to make that a certainty, nevertheless, I undertook a series of experiments with the oils alone. Tests made of oil as supplied by the large manufacturers of artists' materials showed that no matter how the oil may have been extracted and purified, it became yellow and dark. I then procured the very best

raw linseed oil to be had in New York City, and purified it with a method I had hit upon while in Italy, namely, the freezing process. An earthen vessel with a cover was nearly filled with the oil, and placed outdoors in winter, in some sheltered place, and at intervals, when snow fell, snow was added to the oil. This caused the fats to separate from the oil and sink to the bottom of the vessel, fats that in the first place should, in a large measure, not have been pressed out with the oil. The oil, of course, is decanted for use, and I have found it to be clear and very limpid. It seems very probable the same results could be obtained with broken ice in a quicker way, but I have not tried it. But alas! even these precautions did not prevent the oil from getting yellow and dark. The same results were obtained when the oil was purified by water and agitation, in both cases bleaching in the sun not preventing the oil from yellowing and darkening. I tried boiling it more or less, thickening it in the sun with litharge, or red

lead, and also thickening it in the sun without any substance added. Manganesed oil had the same effect. All these tests gave more or less the same results, a complete failure to maintain a pure, colorless transparency. What then are we to paint with, you will say. That I purpose to show you it was revealed to me in the various stages of my search, and the process of reasoning that led to the final indisputable triumphant result.

Canvas or Grounds

In the first place, a canvas or panel should be grounded absolutely white, not only because we have proof that the great technical Masters, and particularly Rubens, used a pure white ground, but because a pure white ground is an absolute necessity to counteract the effects of time, and to give a painting that subdued quality of light which can be obtained in no other way; and further, any other color of ground, in proportion as it deviates from pure white, is a positive injury to the painting placed upon it. Whether the paint is thick or thin, if proper method

and material has been employed, the paint should and will become transparent, and, if anything, the effect more luminous. French restorers of the early part of the nineteenth century have stated that while the work of Frenchmen—like Claude Lorraine, Blanchard, and others who have lived and worked in Italy —was technically constructed on the same principles as the work of the Italian Masters, there was a great difference in body. They also said that the French artists' work had a lightness and delicacy, that the canvas ground was too thin, that this combination made the work lose its original beauty more surely as time passed, and that there were very few Lorraines that had not had the need of a restorer's attention. The French and Italian restorers have privately stated that of all pictures, those apparently done with the Masters' methods were the most difficult to restore, and that to match a tone finely on a Lorraine always required a little study by itself. From this it would seem that it is

wise for durability to have as a foundation to paint on as thickly primed a canvas as can be made, but not so thick that it will crack or not stand rolling, and also have the under paintings rather heavy, like Titian; but, on the other hand, if there is a heavy, pure white ground, like Rubens invariably used, the first and subsequent paintings may be comparatively thin and still be absolutely durable, like his work that has come down to us. Turner's landscapes and marines have, according to my personal observation, a heavy first ground or prime, and a rather heavy first painting, and I think his work is durable, but ignorant owners, curators, and restorers are helping to give his work a bad reputation.

Modern Canvas

The canvas supplied to artists by the modern manufacturer is no exception to the conditions that govern the manufacture and sale of all other artists' materials. The conditions of the commercial side of artists' materials are mainly due to the artists'

ignorance of such things. The dealers, I am convinced, would gladly supply what was needed, if there was a consistent demand. They often undertake, with great labor, to supply stuff of no real value to anybody and a great injury to the artists. They also, I am sure, are trying to get their supply of material of as fine and durable a standard as possible, but primarily from a business standpoint. They very justly say it is not their business to teach the artists what to use, or enforce technical morality among them. They would have an impossible task if they tried. They are in business to supply whatever they can sell at a profit. The only deliberate fraud I have noticed was the temptation to sell some inferior substance as the best genuine madder, this fraud is really serious, since the tubes are quite small, and it is very annoying to make a test of each tube, but, if it is not done, the color in the picture is liable to disappear. The canvas generally supplied by manufacturers is far from white,

and only in very rare cases does it even approach white, and if you ask the dealer he will tell you he will always sell more of that which is low in key and generally of a gray tone, one reason for that being that unless an artist is familiar with the pure white ground and knows how to handle it, it is very trying to the eyes until covered, and also necessitates a thicker paint treatment to cover the white—in fact, causes an annoyance instead of being an agreeable inducement to color. One great colorist I knew habitually used a rather dark, yellowish canvas, and covered that with a very thin "veil" of bone brown or black and "siccatif de Courtrai." So a beautiful study head he had given me has been gradually disappearing in dense blackness, and a picture of his in a public gallery has lost all its beauty of color, and is also being overwhelmed with the rising tide of black, presumably from the same causes. An artist rarely asks a dealer what are the component parts of the ground of this canvas—in fact, I

never heard of a case—and if he did ask, he would get no satisfactory answer, for the dealers do not know. The artist invariably examines the texture and tone of color; beyond that the price, only, interests him; but if he were told this canvas is the very worst stuff his precious work could be put on, he would be startled. To obtain the medium-yellowish, buff-colored canvas the commonest oils and not alone impure white lead are used, but chalk or whiting, honey, wax, yolk of egg, glues, coloring substances, clays, ochres, earths, etc., to get the desired low tone, to prevent cracking, and, above all, to reduce the cost of labor and material. Now such a canvas has at the outset no luminosity of its own, in time becomes brownish yellow, and can never lend any light and life to a painting placed on it; the dull, gray kind is injurious for the same reason.

If Rubens had placed one of his paintings on a dull, gray ground, such as is commonly used to-day, its color would never have re-

tained its original brightness and harmony. It would have become dull and somber in time. Speaking of harmony reminds me of how a well-known European artist lost the harmony from the very beautiful pastel heads he had a happy faculty of doing on gray cardboard grounds. The gray was a very fine tone, neither dead nor heavy, and the pastels were mostly vignettes of beautiful women's heads, but the light acting on the acids in the cardboard changed the fine gray tone and substituted a buff yellow of a darker shade, so that where he had allowed the gray tone to appear in the flesh the change had destroyed all the original beauty and harmony, and a great pity it was! I have used white cardboard and found it subject to even more change to yellow, excepting only when the surface was first thickly covered so as to prevent light from penetrating.

Generally speaking, if any change is taking place in any painting, it is quite sure to be toward yellow, brown, and darkness, and in

fact a real "yellow peril" faces the artist unless he knows how to avoid it.

Leaving aside the lack of luminosity in the commercial canvas at the outset, in time it grows rapidly darker and more yellow from the cheap materials composing it, and unfortunately nearly all modern artists use it. Most painters, alas! care not what to-morrow brings, since most of them have troubles enough for the present without looking for more. The impure oils and other deleterious ingredients make the canvas keep better for the dealers; it remains more pliable, can be kept better in small rolls for a longer time, and is thus more convenient for transportation. As for the ground itself remaining firmly and permanently attached to the linen threads, that depends upon the quality of the glue used, how well applied, and also upon the ingredients of the ground itself. In such a case, time only can decide the question. If, however, an artist made the whole canvas himself, as the Old Masters or their apprentices

did, he would know very well, without regard to time.

Absorbent Canvas

There are various kinds of absorbent canvas or grounds, and consequently not all necessarily exactly alike in their action and results. The probable cause of the use of absorbent ground dates back beyond the tempera days of painting much in vogue before the discovery, or rather more extended use, of oil for picture painting. Its adoption may also have been brought about because it was so much more quickly made. To make an oil ground properly demanded much more persistent attention and labor, extending over considerable time. An ordinary absorbent chalk, whiting, or "gesso" ground could be well made throughout in twenty-four hours, but an oil ground well made required an indefinite number of weeks in winter, and not less than three or four weeks in good clear, sunshiny weather in summer. In short, the difference between the periods requisite for the drying of oil and glue water respec-

tively. This may have caused the extended use of the absorbent ground. The essential difference in material construction was that one had glue or casein dissolved in water as a binder for the chalk, whiting, zinc white, etc., and which could dry well in a warm room in twenty-four hours or less; the other had oil as a binder, and white lead or zinc white as the luminous body, and did not dry well "au fond" for a long time if applied the least bit thickly, and the surface needed, after each layer or coat was thoroughly dried, to be laboriously scraped or rubbed down. Of this manipulation the earliest authentic reference I could find was in a letter of Albrecht Dürer's to a friend in Nürnberg, dated Venice, January 6, 1506, a time when Titian was twenty-nine years of age, and his contemporary in that little city. Dürer's artistic and social position in Venice at that time was a good one. He was publicly commended by Giovanni Bellini to many of the nobility—including the Doge—and the patriarch Aquilija

called on him. The paragraph in the letter follows as nearly as I can translate the old-style German: "I have to paint a panel for the Germans, for which they will give me one hundred and ten gulden Rhenish, with hardly five gulden expenses. I will get the whitening and scraping done in eight days, then I will immediately begin to paint, and if God wills, a month after Easter I will have it standing on the altar." Dürer, it seems, did not have an apprentice, like his contemporaries, but that may be accounted for because he was not able to speak Italian fluently. "En passant," here is where, if an artist made his own canvas ground, as he should, or at least supervised its construction, the old Venetian system of art apprenticeship came in very "handily."

An absorbent ground does not necessarily have whiting or chalk for its white constituent. It may have zinc white or white lead or barium sulphate, but with the manufacturing of large quantities of canvas on the modern

plan, the question of cost is naturally in favor of whiting. This question of cost applies even more to oil grounds. When a canvas ground is made of oil and the white or body constituent is in whole or part made up of whiting, there is reason to believe that the alkali in the whiting acts on the oil and destroys it; hence the change in tone and color. At first such canvas is more salable on account of the discoloration produced by mixing oil and whiting; when made thicker, this substance is commonly called " putty " in this country.

About the year 1800, in Paris, the first transfer of paintings on wood was made to canvas, and was undertaken on the orders of the great Napoleon. One was that of Raphael's " Madonna del Fuligno," supposed to be now in the Vatican at Rome. Hacquin, who undertook the transfer, was supervised by a commission, and they have asserted in their report that the ground on which it was painted was a white glue ground. The same commissioners had in charge the transportation

from Italy to Paris of Titian's large picture "The Martyrdom of St. Peter the Dominican," also for the purpose of a restoration. It was shipped on board the frigate *Favorite,* and before it reached Marseilles a violent storm was the cause of a severe soaking to the already damaged picture. "The wet wood began to swell and the glue ground lost all hold." Hacquin made the transfer to canvas. From this it seems there is plenty of evidence that at least the wood was covered with a layer of glue, even if the ground was not a glue ground entirely.

CHAPTER IV

ABSORBENT GROUND VERSUS NONABSORBENT

THE subject of absorbent ground is not a simple affair, the bad reputation of oil to yellow and darken having doubtless caused many modern artists to cling to this straw of absorbent ground. I said straw, but barbed wire would be a better term. The painters probably thought that if they could get the oil to hide its head in the absorbent ground, like the ostrich, it would not be seen or found out. It is a fallacy to suppose that the oil is harmless if it has become absorbed in the ground; on the contrary, it is then a source of future discoloration and darkening. It is a serious mistake, because as the ground is constructed on the theory that the oil is to be absorbed, there is necessarily a large part of the oil im-

mediately absorbed from the paint as it is applied, which instantly hampers the free movement of the brush and brings about a confined technic—in fact, no technic at all, but an opaque, dull mess. Some painters, to overcome this difficulty, then use more oil or other vehicle, or, as I have seen some artists do, apply on the absorbent surface, before any paint whatever is used, a covering of pure oil alone, and on this fresh oily surface begin to paint. It is obvious that such a method increases the quantity of oil present in the ground and in the painting in such condition and situation as will surely bring about yellowing, blackness, and a dead, heavy aspect. Used in this way there is no logic in the use of an absorbent ground; the thing is an absurdity. On the other hand, there are two other ways, or rather one, with a variation, and that is to cover the white absorbent ground with a thin layer of quick-drying, "copal" varnish, thus making it practically a "varnish ground," which, when well hardened, is a

much better surface to work upon. This varnish can be applied thick enough to have a gloss (a matter of taste), or still thin enough to leave, after drying, a tendency to absorb. If made sufficiently thick and strong and properly dried, it will prevent the oil from being absorbed. But, you will say, what is the good of having an absorbent ground that does not absorb? Why, this: in the first place you have a white ground more quickly made, although the varnish will take away much of its whiteness and purity, but you have still a luminous ground without the certainty that it will turn a yellow or brown from the presence of the oil in the very foundation, and the assurance that it will retain its tone or key of light. Another way to treat the absorbent ground is to apply a layer of glue or size, and, in proportion to its quality, covering the surface so the oil cannot enter the ground, and so making it convenient to paint upon, and making an increase of oil or medium unnecessary. This latter device may be in a measure

incorporated into the original ground when making it, that is, increasing the proportion of glue or casein; but if not made exactly right it is apt to cause the ground to crack from the slightest jar or blow. Personally, I prefer the copal varnish covering to the glue. This subject recalls one of Sir Joshua Reynolds's memoranda in reference to chalk, or "gesso," grounds: "Zuccarelli says that Paulo (Veronese) and Tintoretto painted on a 'gess' ground. He does not think Titian did. I am firmly convinced they all did." Zuccarelli was a contemporary of his and painted landscapes, and Reynolds was using "gesso" grounds at that time. But Reynolds soon after began using a ground very differently constituted, and this brings us to a separate and distinct ground, as different from oil and white lead as oil and white lead is from glue and zinc white—a resinous or varnish ground.

Reynolds sought the transparency and color charm of the Masters in every possible

way, and among many strange devices he made use of the varnish ground. In Reynolds's private diaries we find two memoranda about varnish grounds, one in reference to a portrait of himself, which reads, after a brief note of the colors used, "the cloth varnished first with copal var. white and blue, on a raw cloth." The word blue, it seems, was afterwards struck through with a pen. Other technical memoranda of his referred to gray grounds, but this one was white, and, most important, it was made of copal varnish and white. Nearly all his life he had been trying to get along without oil, and that extended even to the ground. Another memorandum refers to a ground made of Venice turpentine and wax. I have painted on quite a variety of varnish grounds, and among them these two kinds. The Venice turpentine and wax is a very poor example of ground, as it detaches itself very easily from the threads of the cloth. As soon as the turpen-

Varnish Grounds

tine dries it has a tendency to crumble into a powder, not to mention its strong tendency to get a very exasperating yellow. The copal is better, as far as durability is concerned, but it will also yellow. I have used benzin and dammar with zinc white and paraffin. Also alcohol, copal, and zinc white, and some other combinations, one of which gives promise of great good service; but as sufficient time has not elapsed to characterize it definitely, suffice it to say, that with the latter exception they have a tendency to yellow, and their durability is not as great as genuine pure white lead oil ground. But their working quality is superb; as the grain is rough or fine the charm of working on a real varnish ground is very alluring; you can work thin or thick, sketch or finish highly. The freedom of technic and brush is as fine as it can be, the paint retains its even tone as applied, there is no spotting and opacity alternating with transparency, and it can be made so that it is absorbent (whoever may want it) by reducing

the proportion of resin in the material that makes up the ground.

I do not remember ever to have seen a picture of the Masters that led me to believe it had that dead, dull, lackluster, nontransparent look to the surface so much prized by some modern painters, who take special pains to bring it about; and in all my researches I have never seen any letter or description of any notable painting by the Masters that indicated such a surface was intended by the artist. I do not wish to decry it, and, on the other hand, some of the paintings in our museums and private galleries are heavy with varnish. There is a beautiful medium between both extremes, and, excepting of course mural decorations, the nearer you get to the dry beauty of a pastel, the less you have of durability, the pastel having the least durability of all known technics.

The term white ground, as here used, is intended to convey the idea of an absolute white, either the color of white chalk, or the color

and luminous body of white lead or zinc white. The principle and method governing its use was known to all the Old Masters, from whom it has come down to us, and only modified here and there according to their individual taste and personal mannerisms. There is no doubt that they all used a white ground, or their work would not have survived. Of all the Old Masters whose work is in the highest key and shows the brightest colors, that of Rubens stands out almost alone. His work is technically in a class by itself, and although all the others differ as to their individuality, yet their work never reaches quite that high key of luminous fresh color. This effect was due primarily to the absolutely white ground, and to the extreme care Rubens took to preserve it through all stages of his work and the finished picture. Most of the other Masters used it with the ultimate object of giving light and preventing heaviness as time dried out the work. The end sought was, that as each layer be-

The Pure White Ground with the Veil or Stain

came more transparent, the white ground should finally lend its subdued light to the mellowed painting. Pure white grounds are, however, as every artist knows who has tried them, very trying to the eyes until they are covered. Not only that, but if the artist has a thin, even manner of applying paint to canvas, it takes more than one application to cover it sufficiently so it is no longer a cause of disturbance to his feeling for the correct tone or keynote of his work. To overcome this disturbance to the artist's comfort while working, and to save time and labor and avoid repetition of the application of certain tones of color solely to hold down the excessive light, the Masters have resorted to a device which shows what wonderful craftsmen they were, aside from their artistic skill. This device, which I will call a first veil or stain, as it cannot properly be called a glaze, is a very thin, transparent, flat, even stain over the whole surface of the canvas, and of which I shall treat more in detail later on.

Of all the Masters, this first veil is most obvious in Rubens, and was said to have been, in some few cases, made up of a very small quantity of color in powder, mixed with a glue size when used on an absorbent glue-made ground, or composed of quick-drying varnish when used on an oil ground. One eminent Italian restorer, who studied for years the secrets of the Old Masters in their paintings, claims to have found the same kind of glue-size stain in Titian's work. For obvious reasons this veil must dry quickly and thoroughly, sufficiently at any rate so it shall lie undisturbed as it is worked upon by the artist in his first painting. If glue size is used for such a purpose, it follows that it must be over a white ground whose binding liquid was also a glue, so as to bring about intimate union. Rubens, we know, has made extensive use of the first veil, but in a very light, delicate way. His famous pupil, Van Dyck, also made constant use of the veil.

CHAPTER V

TEMPERA

Paul Veronese was said by Mérimée to have begun some pictures in tempera (colors in watery glues) when his canvas was primed in tempera. This is rather a loose statement to make, because this supposes the use of white or body color. In my judgment, if he used colors mixed in glue size on a glue "gesso" ground sometimes, he did it only as a kind of veil of the dazzling white. This veil contained no white or body color, and was only a delicate local color stain or veil. By local colors, of course, I mean a suggestion of the color very thinly and transparently of, say in a portrait, a tint for the hair, another for the flesh, another for the drapery, another for the background, etc., but this, of

course, supposing there is a very correct drawing on the white ground in some kind of crayon not easily washed away by the brush. This local color veil, or stain, is very comfortable to work on if it is varnished sufficiently when dry. On the other hand, the local color may, in a similar way, be applied with oil or varnish as a medium, or it may even be applied after the broad, general flat veil above described has been used.

All these different slight variations of the same principle may be used as the artist's taste dictates, only besides taste a question of time and proper drying is to be considered. Of course a local tinting or veiling of which the binding liquid is size or glue must be applied to a size or glue ground of equal character and composition, and in immediate contact, so a close union is obtained; if not, the paint is liable to peel off and otherwise deteriorate. While on this subject of tempera pure and simple, I would say that unless it is protected by some kind of moisture-resisting

varnish it is as destructible as the lovely pastel. The effects of tempera for decorative purposes can be obtained by oil paint in a finer and far more powerful manner, with a wider range, and are far more durable. But to mix tempera with oil painting, except as above indicated, is absurd. Tempera colors have been put up in tubes by manufacturers every little while on some secret and much-heralded discovery as the Masters' secret, or as a manifestation of a serious revolt against the "deviltries" of oil or varnish, but they all fall into disuse because tempera as a substitute for oil has the fatal weakness that it is not so easy to handle, has not the wide range or power, and its durability is not to be compared with oil at all.

Everybody knows the color of the ground influences the eye working on it. Titian's study for the Pesaro Madonna at Venice has a reddish veil, and though we can easily imagine such a powerful artist using any kind of tinted veil to suit his ultimate intention, he

seems to have had a leaning in preference to red, and the red is an extremely difficult tone to control. That the Old Masters, for all large, important work, used careful drawings, and particularly Titian and Rubens, cannot be denied. There are, however, few authentic drawings of Titian's in existence, and the presumption is that when possible he worked without their aid. Rubens was extremely particular that the ground should maintain its purity and not have any black get in any of the shadows, for which condition he had a wholesome antipathy. Whether the veil be passed over the drawing, or passed over the white ground before the drawing is put on, remains a matter of taste. The probability was that the drawing was placed in most cases on the white ground with some material not easily effaced when a wet brush passed over it. Rubens very probably used the same kind of crayon with which he made his first drawings on paper. This veil, it must be understood, was one broad, flat, very light and

transparent tone—without any body color—spread over the whole canvas; and, as I have tested in many instances, a veil made of copal varnish thin enough to avoid a glassy surface, with some raw umber or other color in powder added when well dried, makes a beautiful and durable ground to work on, either with an absorbent or nonabsorbent ground, only a little more care and experience is necessary when applying to an absorbent ground. If time is of no particular value at this stage of the work, a veil composed of oil thickened in the sun on litharge and then reduced to the desired thinness with the aid of fresh turpentine, and a very little of the desired color added, placed on an oil or other nonabsorbent ground, is very satisfactory, if it is then thoroughly dried out.

Here, with the veil, we must well consider the advisability of the introduction of a substance other than oil into an oil painting—in this case the copal. The use of copal at this stage of the work, and in this manner, is,

from the standpoint of durability, perfectly sound, provided it is thoroughly dry and hard before it is worked upon. The copal thus used can and does dry evenly, and attaches, unites, and anchors itself to the ground, and if treated in such manner as I shall indicate later on, closes the pores sufficiently to serve the other purpose of making an absorbent ground far more agreeable to work upon. The brush goes over the surface more evenly and much more quickly, thus again saving time, which in case of an artist face to face with a sitter or model is of exceeding importance. Further, a work easily done is more apt to have life and interest than if the same amount of artistic facts were put in with more labor.

It must be accepted as a fact, however, that a painting done with freedom and ease is certain to have more beauty. A painting done, as it often is (and shows it, too), with an appalling amount of sheer labor, makes of the artist a laborer. It must go without

saying that the Old Masters, Titian and Rubens in particular, were familiar with every labor- and time-saving device. If their work had not been done easily and quickly, and at the same time with absolute thoroughness and certainty, they could not have produced what they did, and the art world would have been poorer in proportion. The additional advantage of this first veil is that its color can be changed and the tone varied to suit the subject in hand, and thus make an inviting change for the artist himself; or, as in the case of the landscape painters, a reddish tone may be used, which in time comes through and modifies and mellows the raw greens, a process said on good authority to have been used by one of the very best American landscape painters, George Inness. He had studied in Italy, and the Old Masters' method of transparent colors placed one above the other could not but influence such genius as his. His method, as described in reference to the veil, reads thus: "Stained white canvas with Ve-

netian red, transparent, then drew with charcoal, confirmed with pencil," etc. This red veil or stain is beautiful as a base on which to paint the greens of landscapes; it has a fine, mellowing, rich influence after a short time, and is very helpful and agreeable to the artist while working; but as a base for the skies and light parts, unless used with extreme thinness and transparency is sure to come through in time and injure the blues and sky notes; and if so thinly used, would have no marked influence for good or evil on the greens.

In this I prefer Turner's method of the solid white, blue, and blue-black foundation, with a gradual approach to the final local color of each part of the picture. It is true that the character of Turner's landscapes and marines is such that I do not recollect at this moment one that contains a large amount of green for grass, trees, and foliage. This problem of the green, I think, has been solved by Claude Lorraine and Cuyp. The fact that some of Inness's landscapes are showing a

tendency to darken beyond the mellow richness so characteristic of his work, makes me feel the more that Turner's method is the safest and surest for maintaining the light and luminosity equally necessary to be maintained in landscape as in flesh. Cuyp shows the blue and white under the greens very distinctly, agreeably, and durably. All these devices must be used with judgment, and above all with common sense. Technically, painting is not a chance collection of materials—it is a science, as Vibert says—and a glance at three or four pictures by Titian, Rubens, or Velasquez will show a thinking person that the stamp of the science of painting is upon them. And, further, no man must expect to paint like one of the Great Masters even if he had a minute description of their materials and methods by an eyewitness. The ideas herein given are merely the result of a very long and patient search for the Masters' methods and material, and each artist must and should work out his own artistic salvation.

He should retain to the fullest extent his individuality, even as Rubens did his, in face of Titian's great works, and Van Dyck his, in face of Rubens's equally great works. Velasquez calmly kept on in his technical methods, in spite of the fact that Rubens, for nearly three months, did much work in his presence in Madrid, and that he was surrounded on all sides by the work of Titian, Tintoretto, and Paul Veronese.

CHAPTER VI

THE "VENETIAN SECRET": "DEAD COLOR," OR FIRST PAINTING FOR FLESH

BEFORE proceeding farther afield it will be necessary to dwell upon the process or method and handling revealed in making studies of Titian's work at Florence, Italy. There, although I had studied the Masters before with the "Venetian Secret" (as Sir Joshua Reynolds called it) in mind, I had made no actual copies. I now made copies with this special object in view. I soon found I could not produce the effects in the flesh or carnation parts, especially if I did not prepare or "dead color" such parts with heavy body color in a rather cold silvery or purplish tone in the first painting. Those parts had to be correctly drawn and modeled in tone with

black and white, with some kind of red added.

The principle of dead coloring originated undoubtedly in the feeling of some artist, probably Giorgione, that if he could only separate the drawing and modeling from the coloring, and devote all his energy and attention to each in turn, and especially to the coloring of the flesh alone, oil painting would be more successful and pleasant; and that is just what the principle of dead coloring has done, and much more. It has proved itself solid and permanent. It has separated the thick painting from the thin, the opaque from the semitransparent, and the semitransparent from the final transparent. Just note what advantages these are, making for quality, ease of handling, and, lastly, the actual time saving. It has not apparently influenced the virility of the Masters detrimentally. On the contrary, there is every reason to believe that it has helped each strong man to enhance his individuality. Imagine a white canvas with

a drawing in thin, mild, yet distinct lines, showing through a transparent veil or flat stain whose surface is dry and hard. You have no fear of losing the drawing at any time; that is the first stage of separation of the drawing from the modeling and coloring. Then you paint your modeling of the flesh, let us say, in blue-black and white, in tone, and sufficiently thick and heavy of body in the light, sufficiently cold and silvery throughout, and the coldness modified with a suitable cautious addition of red only.

After suitable drying we are ready to devote our attention to the coloring alone, the composition, drawing, and modeling being finished. The principle underlying the use of dead coloring for flesh as against the modern direct method of getting the coloring of the sitter or model at once, or as quickly and directly as possible, is that in the "dead coloring," or "Venetian Secret Method," as Reynolds called it, the "dead color" or first painting is a thick bed or foun-

dation of pigment composed only of white, black, and some kind of red that is chosen according to the complexion of the flesh to be painted; and when this has been thoroughly dried the following paintings are then applied in very thin, transparent, veil-like tones, semitransparent, with or without white. A logical process from the first luminous cold underpainting, and the less cold reds to still warmer, and finally to the yellows; in short, the *placing of one tint or tints on top of one or more other colors, the effect of each intended to be visible, as against the modern direct method of colors side by side.* In painting flesh in this method the great Venetians were sparing and exceedingly careful in the use of yellows, as all painting yellowed a bit, some very much so. But, and there is a but, this method hampers the freedom of spontaneous creation, seemingly so necessary to the modern spirit of haste; though, on the other hand, it did not seem to hamper the Masters who practiced it, such as Titian,

Velasquez, Veronese, Tintoretto, Rubens, Van Dyck, Reynolds, and many others.

The Venetian Method prevented a head, for instance, from being finished with the first painting; but, as Titian is reported to have said, "He who improvises cannot hope to make metrical verses." This expression was used in a technical sense, and it is at this point that another important fact must be noted, and the expression "metrical verses" has something to do with it. Oil painting has the characteristic that it either gets yellow, brown, or even black in a comparatively short time, or if properly executed it mellows and its tones become transparent. As each uppermost tone becomes transparent the next underneath becomes visible, and so on down to the ground of the canvas. Now, supposing your ground is pure white, your painting in time becomes more luminous. If your ground is dark red, such as the Bolognese school used, the whole picture will eventually disappear in dark red. If your ground is dark gray, your

picture will become dingy and somber. Leaving the ground for the present, we find that if the painting is well done—that is, each color note placed in exactly its right place, and not a light messed over a dark, and a cold tone over a warm, etc.—in time the beauty of the picture will be greatly enhanced.

If, however, this is not the case, and lights are on darks and cold tones on warm, color, light, and harmony will be destroyed. Whenever a tone of color warmer and darker is hidden underneath another, the upper is sure to be sacrificed; this is absolutely proved beyond question. Then, in fact, as Titian says, we have no "metrical verses," and the result is in time sure to be an uninteresting brown, dingy picture, and then the well-meaning but often stupid cleaners get at it and finish the suicide. The "Venetian Method," it must be understood, is easier, and the results more assured for posterity in the hands of a skilled artist in that method, but it is exceedingly difficult to one who has been used to the

modern direct method. For you draw and model and make a bed, so to speak, with a monotone silvery gray having a very small quantity of red added. It is a constant translation of color values, light and dark, with correct drawing and modeling, not only in correct values, but also in the very important application of thick or heavy paint. The lights are graded down to the thinner or less heavy paint in the darks. But if the foundation color as a whole is too thin, the thin after paintings would then leave the total final effect too weak. Or if then the after paintings or glazes are painted as a whole thicker, to give the picture the solidity the first painting lacked, then the final transparency is lost, and the final effect of the dead coloring is reduced to nothing.

But, on the other hand, Rubens would paint so exceedingly thin in the darks and in the half tones that he could afford to paint the lights comparatively thin and yet have strength and virility. This all, of course, ap-

plies to the painting of the flesh only, but the principle may be extended for draperies, objects, and landscapes. This principle must, however, have an exception and be inverted in the case of painting black satin or other very dark draperies or objects, as shown most plainly on Van Dyck's masterly portraits. On the canvas ground where the black or dark drapery is to be, a thin, transparent, broad, flat, *warm tint* is placed, and your black drapery, in more or less cool tint, is painted complete, drawn and modeled with the brush "alla prima," or finished with one first direct painting as near finality as possible, and correct in tone, color, modeling, and drawing, and especially not too dark, as it darkens a bit afterwards. Titian, however, painted blacks more thickly, without regard for the ground, and in this respect I prefer Rubens and Van Dyck, because their black draperies make the whole picture appear less heavy. Then in painting red draperies a first or foundation painting is made in red, on the same principle

as dead coloring for flesh, embodying correct drawing and modeling of the folds, lights and darks, etc., only not quite such care is necessary; but the red first painting must be a trifle colder and lighter than it is to be finally, and with the necessary bed or thickness of paint. After this has dried thoroughly, a deeper, richer red, as transparent and minus body as possible, is applied all over, the extreme lights and darks reënforced, and so on. The same principle applies to yellow or blue draperies, and for others it must be intelligently modified or extended. For green the method is, of course, to "dead color" blue or bluish, and veil or glaze with warmer yellow tints. A little thought and invention as well as the study of the Masters will make beautiful combinations and color effects. These are the merest outlines as to the principles; there may be other colors added to those suggested above, according to the artist's taste and ability to bring out a harmonious whole, which should always be the object in view.

The process of "dead coloring" for flesh does not necessarily preclude the rest of the picture being painted "alla prima," as shown above for black drapery. The same applies to the problem of hair, and if that of a woman, and of a kind that changes often in form, as long hair is sure to do, the problem must be solved by painting it "alla prima," or at first trial completed. But before this is attempted its immediate environment should be practically completed, so its tone, form, and color values can be more surely judged and placed to stay untouched; except, perhaps, when it is dry to give it a most thin, transparent glaze or veil of some warmer tint, if it should happen to appear as a whole mass too cold. A most beautiful, I might say the most beautiful example of hair painting in the world is that of Titian's "Saint Mary Magdalen," in Florence. It is painted on wood, with much of the white ground showing through, and in this picture Titian's technic resembles that of Rubens in a very striking manner. The great

waves of glorious hair are freshly, easily, and beautifully painted, in mass as well as in detail. I should not be at all surprised if this picture had inspired Rubens to paint his "Christ and the Sinner," now in Munich; Rubens's Magdalen has blond hair and the attitude is not quite the same, but the ability with which the problem has been solved is very nearly equal, with the choice slightly in favor of Titian. This manner of painting must be often applied to very loose or flying drapery. The "Venetian Method" requires greater care in the inception of a portrait or picture. There can be no changes made of any importance to the contours or forms or modeling after the coloring has been begun without injuring the beauty, durability, and purity of the technic. In short, again no "metrical verses." The technic of a painting of flesh done in this manner acquires a cast over the whole surface that the modern manner cannot give. "The effect of the whole," as Reynolds says, is much more easily and

naturally maintained. The effect of a modern portrait head after a short lapse of time, say twenty-five to fifty years, is, compared to a similar head by the Masters, either very weak, yellowish brown, and uninteresting, or coarse, spotty, and inharmonious. They are mostly weak, for they have not that united bed of uniform luminous color to hold them up. The effect of time, when the painting has been done by the "Venetian Method," is to improve the picture, for in spite of everything a picture will and should mellow somewhat, and even yellow a little. The superiority lies therein that as the outer thin layers, veils, or glazes become dryer and more transparent, the silvery, I may almost say silvery violet of the "dead coloring" appears and very prettily counteracts the yellow, and gives the picture new life, enhances the color and luminosity, and makes it retain a permanent interest, as we see in the works of the Masters. Well-painted pictures are like good wine, they improve with age. But of pictures painted in the modern

method, the most of them are sure to reach the brownish stage, deteriorate, and lose quality. Perhaps an exceedingly small percentage will survive. The adoption of the "Venetian Method" is not necessarily going to produce good pictures, except in the hands of an artist of ability, refinement, energy, and vitality; for no fine, great work is produced without some such combination, much practice and skill being always necessary.

CHAPTER VII

THREE COLORS

THERE has been more or less talk of a lost art, and sometimes I was almost convinced that the methods and materials of the Old Masters were lost. But now I am sure we have nearly all the colors they had, and we have many more, good and bad, that they did not have. I am also convinced that the very wealth, variety, and brilliance of modern colors has been a serious drawback. The Masters certainly painted with fewer colors; this has been said often before, but every artist that adopts the "Venetian Method" will see how logical and necessary the use of few colors only at a time becomes. When painting flesh, three colors at once is a high average mixture, and four seems the limit; but these were all

so pure, fresh, and carefully prepared in the studios that there was no time for them to get half-dry or rancid; they were not likely to change afterwards, and there was no substance introduced to prevent them from drying too soon, as is a commercial necessity to-day with the manufacturers' tube colors. The Masters used their colors as fresh as possible every day, and the oil was, as Dr. De Meyern is reported to have been told by Van Dyck himself, "the most important object of care on the part of the artist; it was necessary that it should be of the freshest, most limpid, clear, and almost colorless kind."

Marco Boschini * relates that Titian said, "Whoever would be a painter should be well acquainted with three colors and have perfect command over them ("haverli in man"), namely, white, red, and black." How much truth there may be in the secondhand and possibly distorted evidence of Signor Boschi-

* *Le ricche minere della pittura.* Venezia, 1674.

ni's as to Titian's methods of work and sayings, I will leave to the reader. But in this case the knowledge and importance hinted at of a particular use of white, black, and red is sustained by the researches and practice of another very celebrated painter, Sir Joshua Reynolds, who experimented and practiced on the theory of dead coloring, often, it is said, rubbing down an old master to see what kind of dead coloring was underneath. As his diaries reveal, he conducted a patient and very persistent search, extending over many years, and attended at times with very great success, judging by the beauty of some of his work. But his search for a transparent, durable, and easily handled vehicle or medium has evidently been a failure, or he did not recognize it when he had it; and the reason of his failure in this respect is due in part to a false theory of the Masters' medium or results.

To return to Boschini's evidence. Many attempts have been made in Italy, and doubtless elsewhere in Europe, by painters and

restorers to discover on Titian's paintings where an injury or other chance favored, to study his method in painting flesh, and nearly all have arrived at the same conclusion as to the principle of the method—that is, the use of a cold, silvery, rather thick or heavy bed or foundation for first painting, yet with a reddish cast. This seems, at all events, to bear out Signor Boschini as to Titian's reported use of white, red, and black. Judging from the unfinished study by Titian, in Florence, of the Pesaro Madonna and Child in the Church of the Frari at Venice, the foundation color or first painting on a great part of the study is obviously left untouched, as originally painted, and it has a strong reddish cast. This red, allowing a slight change for time, was to me unfamiliar; it was not like our modern madder, because it seemed to have more body, and not like vermilion or Indian red, because the former had not the right tone of color and the other had too much body or heaviness, and both madder and In-

dian red were too raw and powerful in the light parts where heavily charged with white. The whole canvas of the Pesaro Madonna study appeared to be thinly stained with this red, and in parts, such as the drapery and hair, much more strongly stained with the same color. It is probable that the red used was either a peculiar crude madder, a red earth, a combination of reds, or a madder modified with a bone brown or black.

In his treatise on painting, written in 1437, forty years before Titian was born, Cennini mentions a red earth, called sinopia, as frequently used. This may have had the soft purple in the half tones and shadows, and the silvery tone in the light parts when mixed with white and used as the " dead coloring " for flesh that we see in the Pesaro study. But the use of this red or other reds in the dead coloring must be a matter of taste and temperament. Veronese's work indicates Indian red, Rubens seemed fondest of vermilion when he painted in that method, Van Dyck used in his

" dead color " at an early stage of his artistic development a far stronger red, which he afterwards abandoned for a much milder tone, Velasquez's foundation color suggests vermilion, and Reynolds, toward the end of his life, evidently made use of Indian red. In one of Tintoretto's largest pictures at Venice, when I saw it, the foundation color was almost entirely exposed. It seemed to be composed only of black and white. I say seemed, because ninety-five per cent of the after painting had disappeared or been " cleaned " off, and visibly only black and white remained. I had an experience which makes me think that possibly it was the same with him. I dead-colored a portrait of myself with white, black, and madder, and then unwisely gave it a thin coating of wax, and upon this I finished with glazings and semitransparent layers. Within a year the paint as it dried, having no longer a secure foothold on the wax, had to let go, and began to peel off. I made a thorough examination and was surprised to discover that

not a trace of the madder in the dead coloring remained! I had made a written memorandum (as was my invariable custom) at the time I painted it, so there was no mistake or illusion, and no artist friend of mine could discover a trace of the so-called madder in the "black and white," which I still have! The same results, undoubtedly from similar causes, have occurred in many of Sir Joshua Reynolds's portraits. At another place I will endeavor to show why black and white alone, as dead coloring, is unwise and pernicious.

Titian

To return to our search. There has come down to us a description of Titian's method of work in the last period of his life by the before-mentioned Marco Boschini, who had the description from Palma the younger, "who had the good fortune to receive the valuable teaching of Titian himself." The Palma description says: "Titian based his pictures with such a mass of color that it served as a base to build on afterwards. The first penciling with a full brush and thick,

heavy color, the half tones in pure red earth, the lights with white, then broken with the same brush with red, black, and yellow; in this manner there were four pencilings for a whole figure; between the pencilings more or less time would elapse. It was contrary to his habit to finish a painting consecutively, because, as he said, ' a poet who improvises cannot hope to make metrical verses.' The contours and modeling would often only be fixed with the third or fourth penciling. Then began the thin glazing and semiglazing and finishing."

Palma has also handed down to us two important sayings of Titian's, the one about the three colors, white, black, and red, already quoted, and the following, which, for the purpose of identification, I will call, say, number two: " To arrive at lifelike flesh tint the carnation should not be finished ' alla prima,' but different tints should be laid one over the other." Of my own knowledge many able men have given the Palma description re-

peated tests, and it has been decided that with black and white, and with any color whatever coming under the name of red earth in combination with a *yellow*, be it yellow ochre or even a stronger yellow there is nothing to recommend the Palma system for color-getting, time-saving, durability, or any other quality that could distinguish it from any ordinary modern four-color process. The description would fit in with what we know and see in Titian's work if we left out the yellow. The " dead color " of the study of the infant Christ for the Pesaro Madonna not only has no yellow, but even might be produced with a certain kind of red and white alone, and even without any black (!), or at least with an extremely small quantity, and what a fine tone it is to build on, cold, yet not black and white. But what kind of red it is would be difficult to ascertain; probably very scarce—like the true ultramarine—or no longer obtainable.

Assuming that the Palma description is a true and errorless statement, and that no acci-

dental mistake has crept in, we know quite certainly that it refers to Titian's method practiced toward the end of his life. This latter method, when Titian made use of it, is easily identified by an artist, and Du Fresnoy, in his history, says that "the pictures which he painted in the beginning and in the declension of his age are of a dry and mean manner." They resemble the modern method of direct painting in that the last touches of the brush produce almost the entire visible effect, whereas in his middle manner, and more beautiful technic, two, three, or more tones of color were placed one on top of the other, and the presence of each tone and color was felt in a soft, mysterious, blended whole.

In his latest method the colors were indiscriminately and heavily mixed in the final brush stroke. What, in the Palma description, the tone of the red and yellow could have been, can remain only a matter of speculation. The early habit of giving the first paintings a very cold appearance for the after

warmer veils and glazes would inevitably cause him to use his four colors of such a kind and manner as to produce a very cool effect, even if yellow were present with the red. Now, no red ochre or red earth known to us, with an equal-keyed yellow, as yellow ochre, would, used in the ordinary manner, produce a cool first painting that would be of any use at all as a dead color, for a glaze of the same color as the paint on which it is placed is of no value. The effect is only to increase the quantity of paint, so we are forced to assume that the red was of a different shade, and also the yellow; that is, both of a much cooler tendency. The red, as Palma said, was a "pure red earth," and was probably the ancient sinopia; the yellow, a color somewhat like a fine yellow ochre keyed up with a very small bit of some fine, strong, yellow, like cadmium and white for instance. These three colors then—white, red, yellow, with blue-black as the fourth should give the necessarily cool first painting that approaches closely to the final appearance the

flesh is to have, and comes nearer to the first paintings that Rubens employed, which were far less cold and heavy than the " dead coloring " of the Pesaro Madonna study, yet maintained enough of the silvery grays to enable a placing thereon of still warmer finishing touches.

CHAPTER VIII

TITIAN'S PRINCIPLES UNCHANGED

My own opinion, after much thought, study, and analysis, is that the Palma-Boschini description does not mean exactly what it appears to say. An artist like Titian, who practices constantly nearly forty-five years in one system of painting, the results of which have brought him wealth and fame unheard of before in the world's history, is not likely to make any radical change. The change in his technic is said to have occurred in about his seventieth year, and in the natural order of things most men would have no technic left at all at that age; but Titian had a fine physique, and so he kept right on. Still, his work shows the threescore-and-ten mark, and I am sure his eyesight was not as it had been in his

younger days, nor was it to be expected that the man of seventy or more should have the strength or vitality necessary to paint the more delicate coloring on the completed dead-color base. It was inevitable that there should have been a change, and what more natural than that the part of the painting which required the finest eyesight and the steadiest hand should become coarser, thicker, lose its definite character to some extent and become somewhat vague?

Therefore I am convinced that the Palma-Boschini description was intended to convey the impression of the use of the *foundation color without the yellow.* I have seen a number of English, German, and French translations of the Palma-Boschini description, and no two convey the same impression; and even some Italian writers gave different versions of what was actually done. The writers are generally ignorant of technical matters, and the artists are unable to express themselves with clearness. Now, if we take that part of

the Palma-Boschini description, as follows: "Titian based his pictures with such a mass of color that it served as a base to build on after—the first penciling with a full brush and thick, heavy color, the half tones in pure red earth, the lights with white, etc." Thus far the description would fit the study of the Pesaro Madonna, for instance; and if we were sure that at this juncture he put his work aside for a thorough drying, assuming it was advanced enough to be correct in form and modeling, we would be sure we had a very good description of his manner and principle of work, for the expression which follows, "then broken with the same brush with red, black, and yellow," would describe the logical sequence exactly. In my judgment that is what Palma meant to convey, and this is what must have followed if there was any truth in the first of the Titian sayings reported by this same Palma and this same Boschini, before quoted and repeated here—"He who would be a painter needs to know but three colors,

white, black, and red, and to have them well in hand (' haverli in man ')." That this was a true saying of Titian's I believe, for his work coincides with it, and that there is an unintentional mystification in the words " then broken with the same brush," for that conveys the idea that the preceding work was still wet, and that with the same brush more wet color, of which yellow was a part, was then incorporated into the red, white (and black) " dead coloring," which, of course, effectually destroyed it as " dead color." Then, again, we must not forget the second Titian-Palma-Boschini saying, " to arrive at lifelike flesh tint the carnation should not be finished *alla prima*, but *different tints should be laid one over the other.*" As I have before explained, if yellow is admitted into a " dead color " or first painting every quality that is absolutely necessary for a " dead coloring " is lost—namely, luminosity and a suitably cold contrasting tone. There is no logic, no science, no beauty, and no " lifelike flesh tint."

If those colors containing yellow and red, and necessarily alike in character, are placed one over the other the results are far different and very inferior to that mysterious beauty obtained by a judicious use of the "dead color." There is a blending and yet a strong contrast that only the superimposition, "or laying one over the other," of colors that are transparent can give. Then, again, Titian himself said emphatically, "the carnation should not be finished *alla prima*, but different tints laid one over the other." With the proper "dead color" your cold silvery red or violet is underneath, and the warmer, less pronounced reds and yellows laid over them in gradations advancing to the proper warmth and wealth of color that nature has. I believe that the preponderance of evidence, as the judges say, is in favor of my interpretation, and that we must assume that Titian's work was done on the same principle throughout his life, though not so well toward the end. There were times long after

1545 or 1550, when the change in manner first became apparent, when paintings came from his studio that had the same style of handling, definition, color, etc., that his early work had. But we must not forget that his son Orazio, his brother Francesco, and that mysterious and industrious relative Cesare Vecellio worked in his studio and may have been able to produce under Titian's direction more careful work than he was capable of doing himself at that age. They had been trained by him for many years, and knew his manner and technic, and it was to their financial interest to imitate Titian's manner as nearly as possible, since they could never have hoped to sell their work as well (or rival Titian) with their own signatures in the corners of their pictures as they could with the magic " Titianus Fecit " there.

Titian had the reputation of jealously guarding his methods and practice. His studio was a sort of family art corporation. We know from undisputed facts that at least

three men helped him in his studio in every phase of his work, from the various arduous manual labors to drawing and painting. His relative, Cesare Vecellio, helped him publicly in Innsbruck, in October, 1548, by painting and sketching three of the seven portraits of the daughters of the Emperor Ferdinand, a feat they both performed in the exceedingly short time of seventeen days! And Titian was seventy-one years of age at the time! They must have had a very good method of work, and excepting only the one account—and that the version that Palma-Boschini have handed down the corridors of time, and which is secondhand at that—there is no description of his method or practice, not even any secondhand or hearsay that carries the slightest evidence of having even a grain of fact.

The impression made by reading Titian's many letters shows the great artist dunning delinquent kings, tricky, dishonorable nobles, and insisting on his very well earned pay, and for which some historians and others have

presumed to call him avaricious and even mean. These letters stamp his character in worldly matters as being that of a cautious, careful man. He had to make his way at first against powerful rivals, and all his life his work had to maintain its superiority against very able men, and before his sun had set, that of Paul Veronese and the aggressive Tintoretto had risen. There is no evidence that he was on very intimate terms with any other artist outside his own family except, possibly, Paul Veronese, whom he assisted to the unusual extent of publicly recommending as against Tintoretto for some important work toward the end of his own life. This may have been a little politics, since Tintoretto lowered himself and his art by doing public work for nearly no compensation, and we know that Titian had a quarrel with his best friend, Pietro Aretino, on Tintoretto's account. Whatever may have been the cause for the change in technic at the latter end of Titian's life—be it haste, failing strength, eye-

sight, or impatience at the necessary delays for drying when he employed his "Venetian Method" or manner—his powerful young competitors, Paul Veronese, Tintoretto, and the Bassanos, have not followed him in his change of technic; they clung to the Venetian Method, and time has justified their choice, for of all Titian's work, that showing the characteristics of this method is certainly the most beautiful, and its durability in comparison to any other manner cannot be questioned.

Going back again to our researches, we meet with indications of what we are in search of in a description, secondhand though it is, of the principle governing Paul Veronese's technical methods of work. We must keep in mind the friendly relations between Veronese and Titian personally, that Veronese had earned Titian's respect as an artist, and also the very great quality and beautiful coloring of Veronese's pictures, peculiar to him individually.

Paul Veronese

The description given by Boschini, and by

him obtained from Veronese's son, relates that "he painted everything first in middle tint, and on this he touched both lights and darks, leaving the middle tint visible everywhere between them, as it was first prepared. The middle tint was laid in opaque color." Let us examine closely what we have here in the words, "he painted everything in opaque middle tint first." What would an artist call "middle tint" in flesh? Viewing a head in a studio light we are forced to conclude that the predominant or "middle tint" is a reddish or violet silvery tone, and this has a transparent covering of warmer tones, leaning first to the warmer reds, then to the still warmer yellowish or golden. We have a foundation coloring or "middle tint" of our own, made up of white, black, and red, and our "middle tint" or "dead color" is also painted in opaque color, so our theory of practice is founded on a close observation of nature, a close analysis of the works of the Great Masters, and thus coincides exactly with the

description—given by the junior Veronese to Boschini—of the elder Veronese's technical method. It further fits in completely with methods described by Sir Joshua Reynolds in his private diaries, and of which I will speak more in detail later on. A foundation tint of red, white, and black is the only construction of the words " middle tint " that will give us technical success. Success by the use of the black, white, and red middle tint in various degrees has been attained magnificently by Reynolds.

If, therefore, we admit yellow to the " middle tint," it will then be no middle tint in fact, as the admission of yellow robs it of every beauty, system, or logic, and reduces the method to the level of an ordinary modern method, with modern results and modern effects. With yellow in the first middle tint, the science, logic, and beauty of superimposition, or laying one tint over the other, is lost. With the yellow, the beauty obtained by placing one semitransparent color on a heavy-bodied light

tone, and a very thin tone as a final glaze, is lost. With yellow in the first painting the labor is increased, the unity of the flesh is lost, the final effects are chance effects, and the artistic problem is made much more difficult. The attempt to systematize the process with a middle tint or dead coloring that contains yellow has never been a success, and the stability of its finished appearance is very questionable. With a good middle tint or foundation color, the chance of placing a dark tone where there is finally to be a light one, a warm tone where there is finally to be a cold, is reduced to a minimum. With the yellow in the first foundation, we preclude the cool luminosity which a painting needs as it gets old, more transparent, a trifle darker, and a trifle yellower. With a dead coloring *without yellow* the lighter, faintly purplish middle tint or dead coloring shines through and counteracts the tendency of drying and age. Here we note the difference between Rubens and Veronese—Rubens's work as a whole being more golden and lighter in

key, while Veronese's work is a trifle darker and has a more faintly purplish hue.

Returning to the Veronese-Boschini description, and the paragraph—"and on this he touched both lights and darks, leaving the middle tint visible everywhere between them as it was first prepared,"—the only interpretation of this paragraph is that as in the finished picture the "middle tint was visible everywhere," it follows that the "lights and darks" placed thereon were necessarily thin and transparent, and that the first painting, "middle tint," or "dead color," was necessarily heavy and thick of body and much colder in color, to give the contrast and make its presence felt.

Rubens and Van Dyck

Rubens must have used a lighter, less purple red in his first foundation than Veronese, and we see that he was very sparing of his shadows. His first painting altogether had less actual body, consequently there was not so much of it "to come through" afterwards, and in turn permitted

the white ground to have a greater influence in elevating the key of light. The more golden tone of his pictures is caused by the warm umber veil, and the milder use of the first silvery violet or purplish dead-color foundation. From what we know of Rubens we must conclude that he did not maintain much secrecy about his work, and had many pupils. On the other hand, only one of them, Van Dyck, seems to have had his entire confidence, and his work viewed from the technical standpoint, though showing a different individuality and a much colder tendency in color, is technically just as fine and every bit as durable and beautiful. Van Dyck's early work shows of course the Rubens technic in a pronounced golden, final effect. Very likely at that time he had made use of the same ground and veil, and the same red in the foundation color. When he went to Italy it became at once apparent that the stronger red of Titian's "dead color" appealed to him, was adopted and used in many pictures and

portraits. This red became so conspicuous in some of them as to be almost a blemish, and, so to speak, not a case of "haverli in man," having well in hand, as Titian used to say. However, he must have realized that it was getting beyond control, and so he dropped the "Van Dyck Red" very suddenly and adopted a tri-color of his own, which was more silvery, natural, and beautiful.

CHAPTER IX

THE METHOD INVISIBLE

It seems proper before leaving this subject of "dead color," "foundation color," or the "Venetian Secret," as Reynolds called it, to add that flesh painted thus very rarely shows a brush mark, the result being there, and not in the least indicating the method. It may be done powerfully or weakly. It only shows strongly that it is not done in the ordinary modern *alla prima* manner, and many an artist has stood before an Old Master and had the same feeling we have when a master in legerdemain has done a surprising and mysterious trick before our eyes; that there is no wizardry about it we know, yet it escapes a logical explanation.

The seemingly insoluble mystery that envel-

oped the Old Masters' method for so many years was caused mainly by the fact that while the modern artist paints with all his power and skill what he sees, the Old Master with his red, white, and black did not attempt to render all that he saw before him; he first made a translation or "dead coloring," and then gave it life. Technically the Old Master wrought as much with his mind as with his eye and hand, and when you come to understand and compare his method with that of the modern painter you will be amazed at and cannot help admiring the ingenuity, simplicity, and durability of his technic. It is so simple and ingenious that it is no wonder it has practically remained a secret for nearly four centuries.

Sir Joshua Reynolds

Sir Joshua Reynolds gave fifteen public discourses or lectures on art, and wrote much on the same subject. The discourses were technical and intended to teach, but in all his public utterances there is not one hint of that of which his diaries were full

when found after his death. His diaries prove that his mind was constantly occupied with technical problems, and it is very likely that had he been absolutely certain as to a method and mediums he would have made it public before he died. He did say the ancients were great, if only because they painted with four colors. He may have thought that if he hinted anything about the technical researches and experiments he was making, the young students would forget to learn how to draw, model, paint, or see color; and further, that some of his very able contemporaries, like Gainsborough or Romney, might run him a better race. It seems probable Gainsborough had discovered one of the most important secrets of the Masters that Reynolds never learned, and which I have not yet touched on and will speak of more in detail later.

During his life Reynolds made many changes in his manner of painting. Most of his pictures are like dark ghosts of what they must have been. Where his first painting was

simply black and white, some of the remains of his portraits suggest Tintoretto, because they were dead-colored like his. If there was red in the "dead color" of his pictures, it has often vanished, leaving cold wrecks, with only faint suggestions of their former beauty. In his lifetime Reynolds heard complaints from his patrons about the changes which took place in his pictures, and he said in effect that he always did his best, and that there was no one who could teach him. In his search for the Masters' secrets he did not hesitate to rub down an Old Master to see what the method of procedure was. He produced many beautiful and thoroughly English portraits, and his practice, in principle, was founded on the methods of the Masters; but his vehicle or medium, employed from about 1755 to the end of his life, was never entirely logical or durable.

This, of course, with a very few exceptions. The pictures produced were very fine to look at for a time—immediately after being fin-

ished—but alas! they did not stay as intended. His error was the theory that the beauty of the Masters' color was produced by the use of a varnish medium, to which, perforce, he was compelled to add wax to enable a sufficient freedom of handling, and possibly with the idea, too, of providing a protection to the color. He held fast to this theory all his life, but never was there a feeling of absolute security in its infallibility, as is so conclusively proved by his continual use of every conceivable combination or mixture. No sooner did he make note of having the real thing, than another would be tried, necessarily, because he would discover the first not to be that which he was in search of. He had no Masters' traditions to guide him. He was a pioneer, a Columbus without a pilot, sailing the seas trying to discover the Old Masters' elixir of creation—but he never found it; yet like Columbus he found much else, both good and bad. In one of his memorandum books he states that he " dead-colored " or founded his pictures, at that time

(July, 1766), with blue-black, lake, and white —and probably in most cases, without his suspecting it, the lake was very fugitive. In September of the same year he proves that he can do without the lake in the first foundation, for this brief note appears, "Lake, yellow ochre, and ult. Dead col. without lake Probatum Sept. 1766." Yes, he proved it as far as the production goes, but time was an evil enemy to the black-and-white "dead color," for it is bound to appear sooner or later and injure the color, light, and harmony.

Then, at another time, according to his own diary, he falls into the other extreme of chilliness, as, for instance, this note in his own Italian: "Jan. 22, 1770. Sono stabilito in maniere di dipingere, primo e secondo o con olio, o capivi, gli colori solo nero, ultram, e biacca, secondo medisimo, ultimo con giallo okero e lacca e nero e ultramarine senza biacca ritoccato con poco biacca e gli altri colori." That is: "I am settled in my manner of

painting; first and second either with oil or copaiba, the colors only black, ultramarine, and white; second the same; last, with yellow ochre and lake and black and ultramarine without white, retouched with a little white and the other colors." He was then forty-seven years old. The natural inference, from the words "I am settled in my manner of painting," is that he thought he had found the "Venetian Secret" of dead coloring with a suitable medium. The foundation coloring was so very cold, that except perhaps in cases of outdoor portraits — like Van Dyck's of Charles I with the attendants, horse, and landscape, now in the Louvre at Paris—he soon found it was unsuitable for studio portraits, and therefore a justifiable doubt arose. The foundation color of black, white, and ultramarine is so extreme in the cold that if Titian or Rubens could have looked over his shoulder they would have gone back to their graves to keep warm.

It is very probable, indeed, that the neces-

sarily high keyed, very cold "dead color" underneath a fugitive red, in a very short time produced the effect of a faded picture. Although he said he was established in his manner of painting, in less than a month another memorandum, dated "Feb. 6, 1770," reads, "Primo olio biacca e nero, secondo biacca e lacca, terza capivi lacca e giallo e nero, senza biacca." Here the first painting is just white and black, and the second painting, to bring in the red, is composed of white and lake; the third, lake, yellow, and black without white. He has dropped the ultramarine, and while the process or method is good as far as it goes, in comparison with Titian's or Veronese's manner it has the very serious fault of black and white instead of a color foundation. The introduction of red in the first painting establishes it as a work of color and helps the painting, as time passes and reveals the ground more, to maintain its color effect.

Soon after he falls into the use of colors and mediums that insure destruction to his work.

The variety of material and method is remarkable; but as most of it was injurious, it will serve no purpose to go over it all here. But in November, 1773, we have this note in his diary, "Dr. Barnard, 1st black and white 2d vermilion and white dry. 3d varnished and retouched." Here, although we still have the pernicious black and white, we have also a return to the vermilion and a dropping of the questionable lake. Then follows another relapse into bad colors and worse mediums, so far as his diaries show. In August, 1779, we have another entry, showing a return to the safe and durable, but so far as the medium is concerned, still on the false theory: "Aug. 1779 Hope, my own copy, first oil, then Venice T. cera. verm. white and black, poi varnished with Venice and cera, Light red and black, thickly varnished." This indicates still the black and white in oil, and alas! then the use of Venice turpentine and wax, with his thin semitransparent layer of vermilion, white, and black, then varnished with the same me-

dium and probably with a light red and black, and then thickly varnished.

Of course this is not good, but it has one compensation, and that is the introduction of light red, a cheap, durable, and, lastly, a beautiful color. To get the thin, light red glaze effect, he was no longer compelled to resort to such combinations as gamboge and lake or gamboge and vermilion with varnish. Now we come to one of his latest diary entries, dated 1781, eleven years before his death, and in the same year as his journey to Flanders and Holland: " 1781. Manner, Colors to be used Indian red, light red, blue and black, finished with varnish senza olio poi retocc, con giallo " (finished with varnish without oil, then retouched with yellow).

This use of the abbreviated Italian still indicated his desire for secrecy. The presence of Indian red—the cold, durable oxide of iron —is a great gain, and in the Reynolds portrait of " Two Gentlemen," in the National Gallery at London, the Indian red is " visible

everywhere,'' as Veronese would have said; and, as in some of Paul Veronese's paintings, just a trifle too noticeable. This is said, of course, with portraits by Van Dyck, Rubens, Velasquez, and Titian in mind, and I suspect that the Indian red has become stronger than as first painted by Reynolds. Its presence in the '' dead color '' is visible in some of Paul Veronese's work, not unpleasantly, but still an unintended flush, perhaps.

Titian said, be it recalled, '' He who would be a painter needs to know but three colors, white, black, and red, and to have them well in hand (' haverli in man ')." In none of the entries in his diary, except in the very early ones up to about 1755, did Reynolds in any way suggest that he used a yellow again in the first paintings or '' dead color,'' and we are practically certain that the '' Venetian Secret '' method of preparing a bed of dead coloring '' to build on,'' of black and white, broken with red more or less, has been practiced by him for over thirty years! It is doubt-

ful if Titian ever voluntarily parted with any of his studio secrets, yet Paul Veronese seems to have succeeded in getting possession of the dead-coloring principle, and another secret of the medium, or vehicle, of still greater value. Reynolds seems almost to have taken his secret to the grave with him, as far as his immediate contemporaries and successors are concerned—Northcote and Beechey excepted. Northcote was such a feeble reflection of his master that he need not be considered here. Beechey's work, however, shows the influence of Reynolds's dead-color method attractively.

Not long before Reynolds died, J. M. W. Turner, the great English landscape painter, while still a pupil of the Royal Academy of London, had access to Reynolds's house, and painted from the great artist's pictures, undoubtedly saw unfinished work occasionally, and being, as we know, a close observer and a logical reasoner, he in time studied out a "Venetian Method" of his own that was perfectly adapted to landscape. He

Turner

of course left out the red in the first bed of color, making use of white, blue, and blue black, three colors. The many Venetian sunset pictures show this plainly, and most strikingly is this indicated in the picture "Grand Canal," in the New York Metropolitan Museum. The luminosity of this picture, with its high key of color, can be obtained in no other way. One can only speculate as to what Turner might have accomplished had he had a talent for drawing and painting the figure, as, although he made an attempt at figure painting, he soon gave it up as not his forte.

Among the successors of Reynolds, one who in some way or other obtained a knowledge of his technical principles and methods, and who practiced them with considerable technical success most of his life, was William Etty, R.A. It took him many years to learn them, but when he had them well in hand he turned out some fine color harmonies. We know Etty traveled abroad and studied the Masters in Italy, yet probably the principles

Etty

of the "Venetian Secret" were well understood by him before he left England. His principles of "dead color" and after-methods were nearly as good as any, and were, as described in his own words, as follows: "Resolution. First night, correctly draw and outline the figure only. Second night, carefully paint in the figure with black and white and Indian red, for instance. The next, having secured with copal, glaze, and then scumble in the bloom. Glaze into the shadows and touch on the lights carefully, and it is done." Etty probably never heard of the Veronese-Boschini description of Paul Veronese's methods and manner, and yet how very much alike they are! In explanation of the description of his method, it must be noted that he painted many of his nudes by gaslight in the evening life classes of the Royal Academy, even after he became an R.A. But, alas for posterity! he did not give his work the final technical treatment that was necessary to make it durable, and his medium in the final stages produced in

time discoloration, which in turn makes the owners of such pictures, be they private parties or public museums, lay their precious work in the hands of unwise but very confident restorers, who proceed, like some surgeons in medicine, to cut away instead of curing; in short, to remove all above the dead coloring! The ignorance of the restorer is only equaled by that of some owners. I have seen a portrait by Rubens, a portrait by Van Dyck, and at least two landscapes by Turner thus excoriated in public museums, where one would expect a scientific treatment and real conservation. If the appearance of the "skinned" picture is not agreeable to their sense of harmony, or is liable to cause comment, they give it a new epidermis, and generally it consists of a golden-brown varnish, the very worst thing. And then the public comes in and innocently wonders why "the old pictures are invariably so dark."

Before leaving this subject of "dead color," or color bed, I would warn those who

have never tried it before, not to fall into extremes. It is very fascinating, and should always be kept "soft and broad," as Reynolds says. The guiding principle should be that the silver grays should be in the first painting, whether done in red, white, and black, or red, white, black, and yellow, or any other way—and there are many other ways. Each artist's genius, individuality, refinement, eye for color, etc., should have perfect freedom. The knowledge and use of this method is not going to make of an artist a Reynolds, Van Dyck, Rubens, Veronese, Velasquez, or Titian —in short, a Master—unless there is a masterly ability to think, the vitality and energy to do; but every artist should bear in mind that there is no wizardry about it all. Titian was addressed as the "King of Artists," and was supposed to have rendered the utmost possible; yet immediately, as it were, Paul Veronese gave the world new great things; Velasquez gave us his wonders; Rubens, in face of all the glories of Titian and Veronese, gave us a

whole line of great, new, beautiful work; Van Dyck's portraits can hold their own silvery glory beside Titian, Veronese, and Velasquez, and, finally, Reynolds gives us still newer sensations of beauty. As there is an endless variety to the expressions and forms art may take, this all proves that we will have still other able men, who will take their places in the front rank of the world's great artists. But the combination of chances to produce another man to stand as Titian's equal, with his busy long life of ninety-nine years, are very slender.

CHAPTER X

THE TRUE MEDIUM OR VEHICLE

In looking over some technical memorandum books, I came across a note in one nearly twenty years old, which says, "On authority of Professor G—— Makart is said to have commenced his work with oil mixed with the yolk of an egg." It was only a few days before reading this that I had seen his large picture "Diana's Hunting Party." I could not help noticing at that time that it was cracking in parts and turning yellow; this memorandum then immediately impressed itself on my mind. The picture cannot be more than forty years old, and, so to speak, in its earliest infancy. As far as the cracks are concerned, they may or may not have been caused by the artist's medium, for I have discovered that you can

make almost any picture crack. It is well known that the white or body tones of a picture are as a rule the last to succumb to the influence that causes the cracking. I have found by experiments on especially prepared tests that the cracks can be artificially produced on heavy body white that has been thoroughly dried! So the cracks in Makart's picture may or may not be caused by the "yolk of an egg" mixed with the oil. I cite this case out of very many where some ingredient or ingredients are mixed with the oil for some fancied benefit. Makart may have used the egg yolk, because there is a tradition that some of the old frescoes had egg yolk mixed with the colors; but these colors also had as the principal medium a watery glue or size, and not an oil. There can be no possible benefit from the use in this way of the yolk of an egg with oil, without a far greater amount of injury. The yolk of egg is an animal substance, and the oil a vegetable; the oil can dry, the egg can only decay in such a situation; indeed, I need

not emphasize the fact, too, that egg is subject to very rapid decay. So where is the logic, or what is the use? As a coloring matter? Surely not. As a deadener of the surface, perhaps; but we have better, more homogeneous things for that purpose in spike oil, wax, spirits of turpentine, or benzin. The egg, I think, is more useful taken internally, and should be kept out of the studio.

Before going farther afield in our search, I would note here the cause of the vanishing glory of the pictures of another of the recent modern celebrities, the Hungarian painter Michael Munkacsy. In Philip Gilbert Hamerton's "Graphic Arts," the author says: "The famous Hungarian painter, Michael Munkacsy, has been good enough to explain to me, in his own studio, all the elements of his method. He begins by a rich brown monochrome, with plenty of varnish on the drawing. This monochrome is in itself a fine, well-nourished, picturesque sketch, and before it is dry he works into it a second sketch in color; not

at all in what we call dead color, such as Titian used, that is, with little chromatic intensity, but a play of the most various and brilliant color, from a palette chromatically complete, such as a colorist would do for himself before nature, if he had not time to finish. One of Munkacsy's pictures at this early stage is a fine medley of hues, through which you may trace the intentions of the artist. In subsequent paintings he develops form through this, and brings the color better together by uniting it. He never clings to lines, but considers nature as a quantity of patches of light and dark, and of different hues. This is quite essentially a painter's conception." This is a good description of the average modern artist's technical proceeding, "He begins by a rich brown monochrome." The most unsophisticated reader must know by this time what happens from such a beginning; it is absolute poison, in time, to any light, clear carnation tint placed over it. "This monochrome is . . . a . . . well-nourished . . . sketch,

and before it is dry he works into it a second sketch in color, . . . not at all . . . dead color such as Titian used, with little chromatic intensity, but a play of various and brilliant color." The rich brown was well nourished, that is, thick and strong, and had no chance to dry before another color sketch was added, necessarily exaggerated, for that is the only way to brilliance on thick browns; and later on he was forced to subdue the exaggerations, for he " develops form " " and brings the color better together by uniting it." Here we have the origin of the pitchy blackness that is enveloping Munkacsy's pictures, and the result is hardly to be wondered at. In fact, had it been otherwise, it would be a wonder. The " Milton and His Daughters " at this early day is heavy and funereal in its blackness, and visibly getting more so. Undried varnish and oil, with " rich brown monochrome " in the first paintings! It is a pity that so much of the world's great work should become lost because of a lack of a few lucid

technical elements, and sad to think that possibly Makart as well as Munkacsy may have realized the existence of this canker in his monumental work, and this may have helped to draw the veil of insanity over the genius of both before they died. In looking over many descriptions of the manner and methods of modern artists it is a very striking fact that no two work exactly alike—of course, merely the methods and material being considered. This is another proof of how each one drifts into his own methods and materials, and that there are no sound traditions. They all seem to go at the production of paintings with a naïveté that is remarkable, each seeking the easiest and quickest method possible to attain the results in view. The remark of a chemist that the "artists were phenomenally ignorant of their own materials, but did not lack confidence," would be humorous were it not the sad truth. When they do begin to question and select ways and means, as some French, English, and German painters are doing, there becomes a

wide divergence of opinion and of the manner of procedure, and above all in material. The search when once begun by earnest men becomes serious. Should they lay down their work and devote all their time and thought to it, only now and then doing something for the public, they soon find that it is necessary to give up one or the other. My own interest in the search had become such a habit, and had so much pleasure in it, that when my experiments finally came to an end, I had been used to the hunt for so many years, I really felt as though I had suffered a loss!

I have before quoted Vibert's panacea for avoiding the yellowing blackness in the medium, and will add a few more words here as to why, in my judgment, the "petroleum and normal resin" or varnish is not logical, and only adds that which it is intended to prevent. The specific gravity of resin is less than that of oil; naturally, the resin will form at the top in any atmosphere warm enough to dry it; the resin then drying first, with the oil

underneath, and the oil only partially drying, the painting becomes yellow, brown and blackens. Here are three substances with uneven drying powers and no affinity. It follows that there is no normal drying of the painting. It cannot be controverted that a painting made of the fewest materials, as far as medium or binder is concerned, and especially if made of one medium alone, is the surest to have harmonious drying, union, transparency, and durability.

The uncertainty that Reynolds exhibits in his diaries in reference to a transparent and durable medium extended throughout his life. Where he used oil in the dead coloring, or throughout the picture, it has "stood well," as in his early work, such as was done before 1760; but this does not mean that it is therefore his best work. It undoubtedly lacks the transparency, "that deep-toned brightness" as he called it, he so earnestly sought for. When he used oil in the "dead coloring," and in his subsequent painting a minimum of good

varnish and wax (especially the latter) with his color in oil, his paintings have also " stood well "; while when the varnish and wax become a factor in quantity there follows deterioration. When the varnish glaze or semiglaze was covered, even in part, by another vehicle there ensued discoloration unless there was perfect and fundamental drying. When there was a simplicity of medium throughout, there was more durability and a minimum of discoloration.

For very nearly fourteen years Reynolds used Venice turpentine and wax more or less, and the more Venice turpentine dries, the more it loses its transparency, unless its transparency is renewed artificially, a device well known to some restorers. In our search after a transparent, comfortable, easily handled, and durable medium we find no inspiration here; we must seek elsewhere. In studying the writings of others on this subject, I find the search has been conducted with a great deal of energy and patience, and a vast collection of formu-

las for mixtures, vehicles, oils, and varnishes made, but no authoritative, logical selection and classification. The works on these subjects place a vast number of ideas and suggestions, good, bad, and indifferent (with the grain of good hidden and disguised), at your disposal—and there you are. If you have had experience of any kind, you may be able to get some assistance; otherwise, you will surely get into bad practice. To wade through, consider, and test the best and most likely methods and mediums in this huge mass of chaff was a tremendous task, and was a very perplexing, trying, and thankless work; but it had an end, fortunately, or this little book would not have been written. The labor was like learning languages—the more you knew, the easier it became to acquire a new tongue. From the many very old, rambling, and obscure Italian writings on this subject, it was impossible to glean a suggestion or an authoritative record that made any sense whatever that was not already in a way suggested or contained in

that very complete work of the Frenchman J. F. L. Mérimée's "Art of Painting in Oil." The same ground has also been very well covered by Sir Charles L. Eastlake's "Materials for a History of Oil Painting." And many original technical art finds were contained in Mrs. Merrifield's "Original Treatise on Painting."

These compilations and many others were studied to find the Masters' medium, for *of all the important things about a painting, the medium or vehicle is the most important.* It makes it, in the first place, easy or difficult to paint, and so helps to make or mar the abstract or artistic aspect. It is the transparent substance through which the color particles are visible to the eye. It is the modest invisible power that holds the particles of color steadily in place in dry weather, in wet, in cold or warm, in strong light or in darkness, while resting stationary or moved about. It is the substance that will hold the color particles in place under favorable conditions

for a thousand years; yes, three thousand years! But instead of new light and precise knowledge from these compilations, the subject became more dark and befogged, so there was nothing to do but test, test and again test, until by elimination I once more came to the starting point of the oil as the medium. But the oil in a more or less pure state darkened and discolored the painting! In all the years that I had been possessed with the idea of discovering the Old Masters' technic, I never once thought of failure, only occasionally feeling very much disturbed and depressed because no better progress was made, and at the lapse of time; and now, when I was once more thrown back logically on the use of the ill-famed oil, and with which I had already made almost countless experiments, I was very much disheartened, and failure seemed imminent.

Thus, for a long time I was thoroughly "stuck" and at a standstill. But by a happy chance, or because I thought so constantly

about it no matter with what I was occupied, it suddenly began to dawn on me that there must be some after-process that took from the oil its power to injure by loss of transparency and darkening after being incorporated into a painting! Heat was applied with no very satisfactory results, as, excepting to facilitate the drying, it did not seem to have any appreciable value in preventing the after-discoloration. Then I tried sunlight, with its steady heat, and with that a distinct improvement set in, and for some time I tested the effect of direct sunlight in many ways and on many substances. I soon proved to my own satisfaction that if the first painting or dead color was thickly used, a thorough or veritable burning out was absolutely necessary; not at all a drying such as the average artist considers sufficient, but one such as would effectually *reduce the quantity of oil.* I might call it a burning out and a *bleaching to a fixed solid state. As long as there is any soft or fluid oil left underneath the surface it is liable to*

darken, and this cumbersome drudgery is necessary from the beginning of the oil ground throughout the various stages of the painting to the final varnish. Many an artist has been aware of the necessity of the drying in the ordinary sense of each layer of paint, but they did not realize the very great importance and necessity of bringing about the *fixed bleached state,* i. e., *the necessity of quickly changing the character of the oil under the outer film. This soft, subfilm oil is the chief factor of the discolorations.* The film itself is more or less porous, and when the oil is mixed with varnish the minute openings are in a measure closed, hindering the evaporation of the subsurface oil, interfering with the light and air contact with the inner surface, and preventing that so essential circulation of the heated dry air in and out of the pores of the oil. The purer the oil, the finer the result.

The studio is no place to perform this process of burning out, because it has no sunlight. Even during the very hot summer months the

painting could not burn out in the studio. Direct strong sunlight is absolutely necessary. This is the only way to attain the transparency and permanence of the Masters. High-keyed, transparent, durable color is not otherwise attainable, and fraudulent colors are quickly exposed. The sunlight at one blow destroys the excess of oil that causes the yellowing, browning, and blackening, and also exposes or destroys the dishonest, the unstable, and the weak color. Good honest colors become more brilliant and beautiful. The false madder quickly disappears, the poorly made vermilion blackens. The fierce white light of the sun is a potent influence for good, and a destroyer of the bad in art as in other things. Climate and weather will have an influence in the creation of good paintings. "Sunny Italy" has produced many beautiful pictures, but, I will hasten to add, so has "foggy London." The possibility of eliminating the oil afterwards enables an artist to use it freely in the colors and on the palette, no other technic being as

easy as the pure-oil technic. In one experiment I had successively eliminated the oil in various degrees until I had burned it *all* out in one part *and the paint had again become a powder!* But note well, that is not what you are to try to do in your paintings. If you go to such an extreme you will waste much energy and patience, for it takes many days' sunshine in spring and summer months, from early morning until sundown, and protection from dust, to bring about this result.

Some prominent manufacturers of artists' colors have stated: "We believe, however, it is a matter of opinion whether there are at present any investigations before the public which, with regard to their direct bearing on ordinary painting, and exclusive of scientific value in the abstract, can be considered satisfactory"; and that, "no person who values a painting ever dreams of exposing it to the direct blaze of sunlight"; and further that, "no experimenter should therefore carry out his investigations under conditions other than

those which obtain in the ordinary life history of a properly kept picture.'' While I believe that the manufacturers in question are honest in their opinions, and that there is much confusion and doubt in the whole matter where Royal Academicians take opposing sides and hold strong convictions, I shall be able, I believe, to disprove their statement beyond a shadow of a doubt, and on absolutely unimpeachable testimony and authority, and thus settle this matter once for all. Success seemed to attend nearly all my experiments, and I felt sure I had the Masters' medium, but I longed for an authoritative corroboration. But how to get it was the question. The Masters were all dead; in many cases even their burial places were forgotten. Well, then, perhaps in some one letter of all these men there must be some chance mention of this, even if they as a class were reticent on technical matters.

CHAPTER XI

THE EVIDENCE

So I again set sail on the sea of discovery. It had long before taken firm hold in my mind that I might get some hint or fact from some autograph letter of one of the Masters. This, if found, would be valuable from every conceivable point of view. It would be authoritative; and with the Masters' work before us, it would be convincing. With this thought, then, constantly in mind I began my search in this new channel. Among many other works and short notices consulted were "Carpenter's Pictorial Notices," consisting of a memoir of Sir A. Van Dyck. The largest collection of artists' letters I could discover, that of Dr. Ernst Guhl's "*Künstler Briefe*" ("Artists' Letters"), edition 1880, was a

veritable storehouse of art history and art research. Dr. Guhl was teacher of art history at the Academy of Fine Arts in Berlin, and died in the year 1862. There have been since his death revisions and additions to his work that have enlarged it greatly, but still it is not now up to date in all the latest discoveries of artists' letters, and particularly of Rubens's letters made by the French and others.

It is a pity that all such discoveries should not be collected in one complete work. The first letter we have of importance for our purpose was written by Titian when he was ninety-one years of age. It was dated Venice, 31st July, 1568, and was addresed to the Deputies of Brescia. The paintings in question were very large, with life-size figures, and intended for the town hall of Brescia. In the letter occurs this sentence: "But the paintings are somewhat troublesome to handle, if one wishes to apply varnish on certain places, which, without placing it in the sun cannot dry." We

have it here authoritatively stated by the greatest of artists that it does a picture some service to place it in the sunlight; and varnish, which our modern artists add to their medium to make it dry, is here shown to be itself in need of being placed in the sun to dry. A modern artist does not dream of the need of assisting the retouching varnish, or any other varnish, to dry in such a troublesome manner; for it must indeed have been "somewhat troublesome" to take such large paintings out of doors into the sunlight so often. Titian received his order and first payment in August, 1565, and the delivery, though not the last payment, took place in October, 1568, over three years later. Did Titian, who was generally so secretive in technical matters, state the facts in his letter? Was it only a conventional excuse to appease the clamor of the Brescians for the delivery of the paintings which he was taking such a long time to finish? I believe he did state the facts. He may not have used the varnish as a retouching

varnish, because he says he applied it in "places"; but he may have used it with color added as a thin veil, as Reynolds was so fond of doing.

Be that as it may, he clearly says it was a varnish, and without the sun it could not dry. So much is certain! Now, if a man of his genius decides the sun is necessary for varnish, how much more necessary must it be for the oil! We know that Titian was in Rome in 1545, and while there painted Pope Paul the III Farnese. And we have a letter of a contemporary of Titian's, one Giorgio Vasari, addressed to Benedetto Varchi, and dated Florence, 12th February, 1547, in which occurs the following paragraph: "As happened, for instance, with the portrait of Pope Paul III, which was placed on a balcony in the sun to dry, and many persons in passing, who saw it, thought it was the Pope himself, and made their obeisance." This, added to Titian's letter, ought to convince anyone that he was *particular in having his pictures placed*

in sunlight to dry. My own opinion is that it was more on account of the oil than any varnish that this was done. When we consider that only one painting out of a thousand comes out of the cold, north-light studios to get even fairly "dried," and those only by chance in summer, it is not to be wondered at their sinking into the brown and black. An old gentleman who knew nothing about art whatever, once surprised me by asking, "Why are old paintings always so dark?" The truth of the statement struck me so forcibly I could hardly formulate a reply.

I am well aware that the letters I have just quoted may not convince the artists and others that my theories are sufficiently corroborated, for few if any modern painters paint according to such principles. They naturally would not like to admit that they have been laboring in vain, that their lasting fame is as though it was written on the sands of the seashore at low tide. I do not wish by this little book to do anything but assist those who are open

to reason and can lay aside prejudice. I am not giving advice; I am only to the best of my knowledge stating valuable facts, that I firmly believe will have a far-reaching influence on the art of painting in the future. The writer is fully aware that advice is very distasteful to those who need it most. In art we need vanity, and it hurts our vanity to admit we are wrong. If the letters I have quoted have failed to convince the skeptics, then let them note the following letter of Rubens, addressed to Justus Sustermans, his former countryman, then residing in Florence, Italy, and dated Antwerp, 12th March, 1638. Rubens was then sixty-one years of age, just two years before his death. I will here quote the whole of the postscript: " N. S. I am afraid, that if that newly painted picture remains rolled and packed up such a long time, that the colors may have deteriorated and particularly the carnations and the white lead have darkened a little. As however your highness is yourself so great in our art, you will easily

remedy that by exposing the picture to the sun in certain inclosed places; and should it be necessary, your highness could, with my consent, lay hand thereon, and there, where accident or my neglect makes it necessary, retouch it. With this I again," etc. The picture was rolled and must have been what the modern artists consider dry, and therefore to be henceforth, according to their habits, severely neglected. But friends, this placing at that time in the sunlight has nothing to do with so-called drying; it is the *magic chemical action of the sunlight* that the Masters made use of to *preserve and increase their color, its transparency*, and, what hardly needs repeating here, its *durability*. Note the admission of the fact that Rubens had, and the assumption that Sustermans had, *special sun-exposed but inclosed spaces* for this very purpose. If a modern artist were shown such an inclosed space of Rubens's, and was told Rubens placed his pictures therein to " dry," he would have turned away and given the matter no further

thought; or if he did think, he perhaps would have said, that does not tell me how and with what Rubens painted. *Without the assistance of the direct sunlight there is no other way or means to obtain the results of the Masters.* The fierce white light and heat of the sun is the magician. I have experimented with artificial heat alone many times, because the sun does not always shine when we need it, but except to give an artist the opportunity to proceed with his work at an appointed time, it does not serve the purpose at all.

For those who still may not be convinced, I will quote a part of another letter of Rubens (the italics being mine), addressed to the French *savant* Nicolas Claude Fabri de Pieresc, and dated London, 9th August, 1629, Rubens being then in his fifty-second year. The extract is: " If I knew that my portrait was still in Antwerp, I would have it detained there, to have the box opened, to see if it has not been injured, or become darkened, as hap-

pens often to fresh colors, if they are, as is here the case, so long locked in a box, and not in contact with the air. It may be then that my portrait does not now look as it did originally. *Should it really reach you in such a bad condition, the best remedy for that would be to put it often in the sun; by this means the excess of oil, which causes such changes, is destroyed; and if from time to time it should again get dark, setting it in the sun's rays must be renewed. This is the only remedy against this heart disease.*"

Are there any skeptics left after this? This letter teaches us, coming from Rubens, of all men the one from whom we would have it most, that he used *oil*; and, judged by the extreme solicitude displayed by him to apply the " only remedy " for " this heart disease," the darkening, he must have used oil freely. The easy flow and freedom of the brush shows that he must have used plenty of it (but never too much), and that the surface over which the brush moved was perfectly dry and hard.

His paintings have the appearance of having been done at one *coup*; at one cast, like bronze. There is a unity throughout, a lightness, a beauty, as Reynolds said, "like a bunch of flowers," that was only brought about by the great magician the sun. We know from the writings of Rubens that he was very particular to keep dust from his unfinished paintings, and that on this account he did not like windy days. Like Titian he often delayed sending away paintings in order to sun them. The writer cannot resist the temptation to quote two more little extracts from two Rubens letters written on the same day, dated Antwerp, 26th May, 1618, and addressed to Sir Dudley Carleton. The first is as follows: "We have had to-day so fine a sun that (a few excepted) the whole of your pictures are so dry that they could be packed to-morrow. The same may be hoped of the others in the course of three days, according to the appearance of the good season." The second letter contained this interesting paragraph: "Still

with the aid of the sun, if it shines serene and without wind (which, stirring up the dust, is injurious to newly painted pictures) will be in a fit state to be rolled up in five or six days of fine weather."

CHAPTER XII

SUMMARY

It seems hardly necessary for me to produce any further evidence in support of my contention in regard to the medium and methods of the Masters. We have our evidence fortunately from the two greatest technical giants, Titian and Rubens. At last we have light upon a "mystery" that has long troubled generations of artists. Many an otherwise brilliant genius has struck this hidden reef and gone down. The secret of the medium lay hidden behind that innocent act the "drying," and in an ordinary sense that has hardly any significance, for even the dullest painter may want to dry a picture; but by making diligent and thorough use of the strongest sunlight during the progress of the work, and particu-

larly immediately afterwards, a painting begins to attain that fine, enamel-like surface of the Masters, that "life-like" appearance, so unlike an ordinary oil painting; that wonderful appearance, that has deceived and baffled generations of capable painters; that appearance of transparency and lightness, yet with its depth of color and solidity of body—in short, that appearance that has made men like Reynolds hold for a lifetime to the false theory that it could only be accomplished by means of a varnish medium. How many artists there are who solemnly extract every drop of oil possible from the tube colors, and substitute some rubbish of their own or somebody else's invention. Some of the greatest names in modern art will come under this head.

The various theories and inventions intended to accomplish the Masters' technical results would by themselves fill volumes. And yet there are some isolated cases of artists in various countries who have solved this problem

in whole or in part, and who in consequence have generally attained the reputation of colorists! It is quite certain that those who have not studied, worked, and solved the problems as the Masters did, have not retained any reputation as colorists. I might cite the methods, vehicle and palette, employed by many painters in the last one hundred years, and who at one time had reputations as colorists, yet whose work to-day has an uninteresting, dark, yellowish-brown appearance. As I have said elsewhere, no two have worked alike, yet the results are alike in brown, dark pictures. Now the Masters in the principle of their work, and almost in the palette, were alike, yet the beautiful results varied greatly. Each man's individual taste for color was stamped on his work ineffaceably. "Sunny Italy" seems by nature to have been the birthplace of what Reynolds called the "grand style" of painting; but if climate and environment had anything to do with the production of fine paintings, why did it appear to cease soon after the

deaths of Paul Veronese and Tintoretto? The decline of the art of painting is so pronounced, that were it not for a few Frenchmen, and the great Flemish and Dutch painters, there would be a complete dark break between the Great Masters and the present times. Almost in the same year of Titian's death, 1576, Rubens was born, 1577. He and Van Dyck carried the great work onward far north of "sunny Italy," in Antwerp and foggy London. Thus we see that the controlling factor in the production of masterpieces is not climate, or indeed any other feature of natural environment, but that fortuitous and most truly glorious incarnation in one man of the magic trinity — Knowledge, Ability, and Vitality. The Master, all hail to him!

Before closing this story of a search for the secrets of the Masters, it will be proper to take up the subject of colors. Speaking generally, I found both the colors and the dealers much maligned, for the treatment of the colors is not quite understood. I

Colors

have found the tube colors sold by the reputable and old-established houses to have a high average of quality, although I have frequently had to reject a tube as being much too old, and occasionally a color that was not the shade desired, or appeared soiled by foreign matters, especially the blacks and the darker colors, such as bone brown, the madders, and raw sienna. The whites and ochres were apt to be discolored. With the light colors, the soiled state was plainly apparent on inspection before use. The dirt and dust particles, especially lint, in the dark colors, become only visible in the process of handling and "drying."

The manner of drying also indicates whether any other substance besides oil was mixed with the color. Then again the fact that very few tube colors have *linseed oil only* as the oily constituent must be considered, some having poppy oil, and most having probably nut oil. Now this is one serious disadvantage of the tube colors, without considering that there may be wax or some other substance

added. The oil in some of the tubes may be rancid and stale, in others fresh, and with probably three kinds of oil the results cannot be as good as the Masters' colors and fresh linseed oil would give. Nevertheless, in very skillful hands I have seen results closely approximating those of the Masters. In a great many cases, on the other hand, I have seen very poor work done by skillful men, where I had good reason to think the results were due to the inferior material. This is the dark side of the otherwise convenient modern system of having large manufacturers prepare colors for the many artists, as against the old system of having each artist prepare his own. In the latter case, if he had no helper at hand, he would find it a very great addition to his hard work. But then he could mix his colors to a consistency to suit his habit of working, make sure his color is pure, his oil pure and fresh, and last and most important, that no foreign substance is present to retard its natural drying.

From the present conditions it hardly looks as though the apprentice system of the Old Masters or the artists preparing their colors in their own studios will ever be restored, so it behooves us to try to improve the system we have. The only essentials are purity and genuineness of color and purity and freshness of the oil. It seems to me that possibly it would in the end pay the manufacturers to have strict labels as to kind of color, oil, and date of placing on the market; *above all whether the color is light proof;* then charge a little more for the extra trouble and expense for withdrawal of old colors from the market. What I shall say here about colors is only as as artist is concerned with them. Every artist who buys a color in the market must make a test of every tube or take the maker's word as to its genuineness. Of course this does not refer to the ochres, for they are so cheap and plentiful there is no motive for fraud; but in regard to nearly all others, and particularly the expensive colors, the artist must do one or

the other. And here I wish most emphatically to caution the artist to use madders or other strong reds only when they are absolutely *light proof*. I had occasion to paint with white, black, and madder without any other color, and in a year the madder had vanished —it had been bought of one of the best houses; and this reminds me of some portraits by Gainsborough, the colors of which, particularly the red, had faded. At about the same time they were painted, Reynolds also painted some portraits that subsequently faded, and when complaint of this was made to him, he made his famous little joke of "coming off with flying colors." Very likely they bought their colors of the same colorman.

Many strange causes are given for changes in colors on paintings, and often when the wiseacres do not know the cause, they make one up. Among those doing double duty are gases; somewhat like the cause of fire when the cause is unknown, it can always be assigned to spontaneous combustion. It seems

very strange, too, that the "gases" affect certain men's work, and others not at all. I believe the ochres are the only ones of all the colors that have maintained a good reputation with us all. Is it because they are not as handsome as their sisters? In my talks with artist painters I have heard nearly every color, excepting a few ochres, in turn condemned, beginning with white, all down the list. In my experience and tests I have found most colors commonly used, and having a bad reputation, to be satisfactory if used alone or properly treated. This of course does not refer to aniline colors. It would be impossible for me to take an ordinary color list of the dealers, and go through all, and give an opinion on their lasting quality. Each artist, as his taste and judgment dictates the use of certain colors, should learn to get in the habit of testing them. It is easily done, as I will show later on, and requires only the will and some attention.

Beginning with white lead, be it Cremnitz white, silver white, flake white, or other good

white lead, it has been asserted that some colors, as for instance vermilion, suffered when brought in contact with white lead, or rather, that the lead darkened when brought in contact with vermilion. Pure vermilion is occasionally characterized by fluctuation, that is, under certain conditions of light and temperature; it gets darker in a strong light, and in a weaker light returns to its former state. I have made tests that extended over a period of twenty years, and have found that if the colors are used in the manner of the Masters, the vermilion does not mar or injure the white lead, nor the white lead the vermilion. Of this I am firmly convinced, even though such an eminent painter as Vibert says that it is necessary to use zinc white with vermilion instead of white lead. In his book he declares: "Sont bonnes aussi; Le Cinabre, Vermillon français, Vermillon de Chine, en ayant soin de ne jamais les mélanger au blanc de plomb ou d'argent, mais au blanc de zinc seulement." To drop white lead and use that sickly zinc

white, instead, in painting the flesh, for instance, is a serious nuisance, though in painting red drapery it is not so troublesome. Take vermilion from Rubens's paintings, and you take the heart out. It seems to me inconceivable that he could have bothered with zinc white. I shall conclusively prove that he used white lead and not zinc white. The whole matter in reference to white lead and vermilion always rests on the sterling purity of the white lead, oil, and vermilion, and the proper treatment, as indicated in the preceding chapter.

I am aware that it is a tradition that forbids the mixture of white lead and vermilion, and substitutes zinc white in place of the white lead. To an artist of an inquiring mind, vermilion and white are very obvious in Rubens's paintings; but if proof were wanted as to the character of the white he employed, we have the very best, over his own signature, in a letter quoted in the preceding chapter to his fellow artist and one-time countryman, Justus Sustermans, dated Antwerp, March 12th, 1638.

I will give only a part of the postscript. He writes: "I am afraid that if that newly painted picture remains packed up such a long time, that the colors may have deteriorated—and particularly that the carnations and the white lead have darkened a little." Fortunately Rubens was one of the greatest of the Old Masters, and the question of white lead and vermilion versus zinc white and vermilion is in my judgment settled, once for all.

Since flesh is conceded to be one of the most difficult things to paint, I have given my attention to such colors as I thought might enter into it and the immediate environment usually portrayed. The Old Masters, as I said elsewhere, had one ochre, of a deep red quality, that probably is unknown to-day. But on the other hand, we have many good substitutes and more and better colors, excepting only genuine ultramarine, which on account of its expense is practically prohibited. It was expensive and scarce in the Old Masters' time, as some of their contracts for paintings show. I

think we have so many good colors that it is really an embarrassment of riches. I am sure that many artists are often puzzled to decide which colors to leave off the palette. The absolute certainty that the Old Masters had fewer colors should guide us in our use of them. They knew how to employ the simplest colors with the greatest effect. The nudes in most cases were painted with a striking absence of strong reds and yellows. One day in looking for two colors to make a rich, warm veil or "glaze" with varnish, I was very much surprised to note the almost exact resemblance a thin mixture of varnish and light red was to a mixture of madder and a powerful yellow. Except toward the finishing, the Masters' principle of flesh-color effects was to avoid the mixing of red and yellow as much as possible. Their habit was, for the flesh to use only three colors at a time—a white, a black, and some other color, the latter being constantly changed according to the progress of the flesh painting. One day it would be a

strong red, and when that was dry enough to proceed, a warmer red was then laid over, and finally the much warmer yellow. This procedure insures simplicity of color and durability.

The more modern practice of mixing a red and yellow, adding, for the colder tints, black and white, or blue and white, then probably breaking this mixture with still other colors, is more complex on its face, more likely to make a bad chemical compound, takes more time, and one color kills the purity of the other. What are the probabilities, under such conditions, of color durability? Then, too, a brilliant yellow or red may have been strengthened with a color lacking permanence. The artist is too ready to take the color that is most brilliant and reject the sturdy, honest, though less pretty color. Take, for instance, yellow ochre. I have known a manufacturer, in trying to displace a rival, to place on sale a color much richer and stronger than ordinary yellow ochre. The injury to permanence would

come from the presumably bad character of the adulterant. To return to white lead, there is one idea entirely personal with me, and it may have occurred to others, that is, that I find the white lead often ground too fine. There ought to be two kinds, each equally *white, clean, and pure,* but differing in the degree of the grinding. One should be considerably coarser, not in the other extreme, but so it will lose the pasty, close consistency, and move better with the brush for heavy body tones. I have found when large tubes of so-called decorative white lead were put out for sale, it was not as clean, pure, and white as it should be.

CHAPTER XIII

DURABLE COLORS

THE reader is probably well acquainted with the principal safe colors, yet for the benefit of those who may not know, I will mention a few which when made correctly may be relied on, and which have an extreme range.

White lead, blue black, ivory black, bone brown, cobalt, ultramarine, light red, Indian red, vermilion, the lovely madders (rose to deeper shades), cobalt violet, yellow ochre, raw sienna, burnt sienna, burnt terre verte, raw umber, burnt umber, cadmium (in two or more shades as required), terre verte, verte de cobalt, the oxide of chromiums, and quite a number of others. But this is already a large array to have handy for any possible subject, and not at all likely to be used for any one

painting. The smaller the number of colors used, the better. I did not mention the chrome yellows and other colors constantly used, especially those our friends the landscape painters are in the habit of using—the strong greens, and blues and yellows to make greens. I will describe later how each artist can test easily and surely each color he is in the habit of using; this will protect him and his work, and if generally adopted will put dishonest or incompetent manufacturers out of business. The tube colors spoken of as safe are those only of the old reputable manufacturers.

It might be well to say a word more in regard to cobalt. Years ago, in Munich, an instructor of mine condemned it. He declared it turned green, and that it was adulterated with powdered glass; but I have since tested it, and come to the conclusion that the oil in the color may have deceived him, and when it turned darker yellow the blue naturally took on a green tint. The tests have proved it reliable, and I have regretted not

having had as much use of it as I otherwise should. *The beauty of a blue, violet, purple, or a pearl-gray tone is very quickly destroyed by a yellowing medium.* Ultramarine, both alone and in combination with other colors, I have found excellent, except that when combined with cadmium or chrome yellow there seemed to be a doubt, the blue apparently overpowering the yellow—but that comes under the head of green. If its color is satisfactory, a reliable yellow to mix with the blue to make a green is said to be citron yellow (chromate of zinc). Light red is one of our finest and most permanent colors, and should be used where possible, in place of combining two stronger colors that just turn out a tone the exact equivalent of light red and likely to be less permanent. Indian red, when mixed with white, is a fine tone, but care should be taken in its use, as its strength seems to increase with time. All madder colors, when well made of the genuine madder and clear pure oil alone, are reliable and permanent. Cobalt

violet seems thus far to be durable. It is the only color with a tendency to violet I know to be stable. The madders of very purple shade do not seem to be either genuine or permanent. If the artist's need for reds extends beyond Indian red, light red, vermilion, madders, and cobalt violet, it will be necessary for him to make tests, since there is no doubt about these, and there is about some or nearly all others, and these cover a wide range. Yellow ochre is a true, permanent color, and should always be ground very fine; indeed, the finer the better; the same also applying emphatically to light red. These two colors if ground coarsely lose their true beauty of tone. Raw sienna and burnt sienna are good, permanent colors and should be very useful occasionally. Burnt sienna is very similar to light red, in that they are both close to the dividing line between red and yellow. The light red seems nearer to the neutral line than the burnt sienna, the latter having more yellow, and in consequence, for painting the carnations, not to be com-

pared to light red. Artists who have painted with a restricted palette will understand my meaning. With a restricted palette one at least learns the true power of each color. Burnt terre verte when it has its true shade and not burnt too much, so it resembles burnt sienna, is a beautiful tone, and very useful in breaking either a red or yellow. When used in combination with black and white it gives beautiful, high-keyed notes that occur in the nude, are quickly mixed and permanent. The cadmiums, and even the chromes, I have found good if properly treated. I feel, however, that they do not stand mixture with blue very well. I know the chromes have a very bad reputation, but I have tested good cadmium with good white lead, and good chrome with good white lead, and they have behaved very well. The one annoying manifestation of these colors occurred when mixed with a blue, especially with the Prussian and Antwerp blues, and even when united with our good friend ultramarine they have shown a marked tendency

to become overpowered by the blues. The Prussian and Antwerp blues have a well-earned reputation for getting black. Did the Masters use asphaltum? I believe they did, but not in the modern manner. I believe they never mixed asphaltum with oil. It is itself a deep rich brown, turpentine varnish. If the asphaltum is mixed with oil and used freely as an artist's color, the turpentine in the asphaltum evaporates, the asphaltum films over, and as in other mixtures of oil and varnish the oil remains undried underneath. The first good rise of temperature in the summer causes the oil to expand, and gravitation starts a movement downward. Used with oil, asphaltum absolutely produces blackening and deterioration. The unfortunate use of asphaltum may be noted in two pictures of Munkacsy's, " The Pawnbroker " and the " Last Hours of Mozart," now in the New York Metropolitan Museum.

A word about color tests. The only logical color test for artists is the prolonged contact

of the color with air and sunlight. When a color is to be tested it is necessary to have a canvas grounded absolutely white, which is itself above suspicion of any possible change, to receive it. Therefore, to test color we must first make and test a canvas. A good linen should be chosen, and the ground, be it a glue, an oil, or a varnish ground, thoroughly exposed in the sun. An oil ground is the best for this purpose, and an absorbent ground should not be used unless it is first covered with a sufficient layer of finest copal, and of course dried thoroughly in the sun. When your test canvas appears to be perfectly white, place a very large thumb tack near the edge of the stretcher and through the front of the canvas; press it close to the canvas to prevent the sunlight from reaching that part of the ground under it, then expose canvas again to the sunlight. After about ten days of sunlight exposure remove the thumb tack, and generally there will be found a circle of faint yellow where the sun-

Testing Colors

light could not penetrate. If no yellowness is shown, then the canvas is a safe white; if there is any yellowness, then the thumb tack must be put in a new position and the process renewed until there is hardly any difference in the color or tone of the white ground and the part that was under the thumb tack.

Having your canvas, you divide it with very faint lines in even square or oblong spaces of about two and a half by three and a half inches, and these spaces are to be separated by at least one-half inch all around. In other words, the square or oblong spaces are to receive the color to be tested, and no two colors should come in contact. It is best to have a chart or test canvas for each group, one for reds, one for blues, one for yellows, etc. It is not well to try to test a strong green in immediate proximity to a strong red—say, a vermilion—for the eye is strangely influenced by these two colors, as the following story shows: A friend was painting a man's portrait, and

during the progress of the work decided to change the background into a rather strong green. He had some fine Gobelin tapestry, representing a landscape, for the actual background. Then he decided that the black clothes needed repainting, and when I saw the picture again, he asked my opinion. I asked in turn, " Do you see such a strong red cast (obviously madder) in the black of the clothes as you have painted them? " He said, " Yes." I who had come to the painting with a fresh eye, uninfluenced by the green, did not see the red cast in the black, as I told him.

I could cite many instances of the peculiar influence of the conjunction of red and green, some of which were comical. I have no doubt much will be written on this subject in the future, and especially in connection with " color blindness " and railroad signals. I have seen this effect of green on the eye embodied in a landscape painting many times: where the sunlit green predominates in landscapes, artists have painted red or violet shad-

ows that were really gray, bluish, or even greenish, and the effect was false and inharmonious; though the artist paints what he really sees, as a true color value, he does not realize that it is not a normal seeing, and at any rate is an untrue exaggeration. The public instantly know the contrast is false, for they are not under the influence of the green any length of time. Their eyes are not strained or perhaps tired, nor need they look at the green as intently as the artist had to.

When the chart or charts are ready (it is best to make a number at once, to have them handy) the color to be tested should be carefully and quickly applied with a perfectly clean brush to its square as evenly as possible. Then at once, underneath each color for which a clear space of white was left as indicated above, a memorandum must be made as small and legible as possible of the date, name of color, manufacturer, and whether with any extra oil or other ingredient, such as varnish,

megilp, etc. If two colors are mixed, as cadmium and white, for instance, the memorandum must be made at once; no matter how sure one may be of knowing and remembering, this memorandum must not be neglected. I had many days of "brain cudgeling" on one occasion because I failed to properly label a test, and only put down the first syllable of the name.

On the chart as above described many experiments can be made that are usually tried on paintings, with the resultant creation of bad pictures. A fair test is to have the colors exposed to the full sunlight for about eight months (beginning with March) in an inclosed space that receives the sunlight for at least six hours each day, the test chart to be protected from dust, dirt, and moisture. If the colors are good, they will get more clear and brighter, some become very brilliant, and of course as the oil is destroyed they get lighter in key, but this lightness is nothing at all like the fading out of a fugitive color. Some col-

ors become much darker, some only a trifle so, as, for instance, vermilion. Should it, however, get very much darker, it is an impure manufacture or adulterated. A bad cadmium turns a distinct greenish tint, and a good cadmium becomes more beautiful. The test should also be applied to the oils and varnishes that are to be used. Each artist can and should in this way test the colors that he is partial to and is in the habit of using. It is a clean way, does not require any appreciable time, and is a sure test. It will also teach him how beautiful some are, and in a way he never realized. I am quite sure in my own mind that the Masters tested every new batch, or newly discovered color, in this way with Nature's chemist, the sun. No matter how good a name or certificate of character a color has, if it cannot stand this test, it should be rejected. On the other hand, if a color has a bad reputation, if it can stand this test, it may be used. If two colors do not agree, this method soon shows which is the weaker or the vicious. This

method of testing does away with the great loss of time and labor of grinding and preparing colors in the studio, which otherwise would be a necessity as a protection against fraud or carelessness.

CHAPTER XIV

RETOUCHING AND FINAL VARNISH

Before closing, it is necessary to return to the subject of varnish again. A retouching varnish seems sometimes necessary on account of the varying surface caused by unequal drying of overlapping color. Modern artists are in the habit of using the very-quick-drying alcohol varnish. I regard it as a good principle to keep all vehicles and varnishes as much as possible out of the painting but oil. I know that the burning-out process is retarded, and sometimes stopped altogether, if the oil paint is under a varnish. We know that Titian used a varnish at "certain places," but I am strongly inclined to think it was only an oil slightly thickened in the sun on litharge, and then possibly thinned with turpentine. He

may have used it, too, as a glaze or veil. In regard to the final varnish, the court physician of Charles I of England, Dr. De Meyern, claims to have heard Rubens himself say, that an "oil varnish, only, should be used, as it is the only one that resists moisture; and that he made it of fine linseed oil, much thickened in the sun on litharge." The final varnish, of course, should be very thoroughly "sun-burned." I have before stated, that even if we had a perfect description of the methods and material of Titian or Rubens we could not produce a Titian or a Rubens masterpiece, nor can we by the aid of the great sun, on a poorly constructed picture, make an Old Master of it.

The White Palette

One recommendation I cannot resist making as strong as possible, for several reasons, and that is the use of a white palette that is impervious to oil. The first reason is that the tones to be mixed are much more easily distinguished, and hence a lesser strain on the eyes, and especially is this the case with all tones from the lights down. The

second reason is that the dark, transparent glazes can only be properly judged on a white palette. The white palette loses some of its strong, glaring white with use, and so becomes still more valuable by becoming nearer to dead coloring of flesh, but still much lighter and with no tint of red or yellow, and thus permitting an instantaneous judgment of the true character of a mixed or unmixed tint. It must be understood that the palette must be kept clean or its use as a white palette is of course an illusion. The final reason for the use of a white palette is that it forces and leads the artist unconsciously to work in a *higher key*. Many fine painters besides Vibert have recommended it. I have in my humble way used it many years, and found it more useful and attractive than the ordinary brown kind. A well-equipped painter should have at least three palettes of different sizes.

I want to pay a tribute to the finest portrait painted in accordance with the Old Masters' principles by an American that I have ever

seen. It is the full-length portrait of Alexander Hamilton painted by John Trumbull, one time aide-de-camp to General Washington. There are several Trumbull portraits of Hamilton, but the one I refer to is that in the New York City Hall. It is as fine as any Van Dyck, and painted in Trumbull's best manner, after he had been abroad. Unfortunately, about fifty years ago some miscreant cut the picture with a knife down the center from about halfway from the top. It has been relined several times, but of course this scar will always show more or less. It is such a wonderful picture that, outside of its historical interest on Hamilton's account, I think the picture should have a more secure home, like the New York Metropolitan Museum, secure from neglect or further chance injury, and primarily where it is possible to see it well and conveniently, which is not the case now. The black-silk clothes are painted in first-class style, the background and drapery are beautiful in their transparency, the

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flesh silvery, the whole portrait painted in a broad, masterly manner. It is totally distinct from the dry, hard, untransparent manner in which he painted the Washington portraits. This portrait would hold its own if placed by the side of Van Dyck's "Duke of Richmond," now in the Metropolitan Museum. May there be many more like it.

"Common sense" is necessary as one of the guides in all human affairs, and will be found very important in the production of fine, durable pictures. In Munich, in times past, an Italian colleague had the habit of painting mostly with his fingers. He did it because, he said, Titian painted thus. It is true that the Palma-Boschini description says, that "in finishing, Titian painted as much with his fingers as with his brushes." But my Italian friend failed to realize in the remotest degree how Titian had prepared for that final stage of finishing! It is needless to say his painting did not at all suggest Titian's technic. His mind happened to grasp

only the least important detail of a principle.

All over Italy artists are still painting with their fingers. Many young art students are misled by this and other descriptions of technic. Titian, as I have said, was fond of a red veil over the white canvas. In fact, he used red very freely, yet was always able to keep this risky color under control. The Bolognese school, seeing this red in Titian's pictures, immediately takes up the idea and exaggerates it beyond all reason. They thought to improve on Titian, and instead of veiling the white ground with a delicate, transparent red, they made a dense red ground of bole and painted on that, with the result that all work so painted was in time destroyed or has become uninteresting. I have tried to indicate a principle in this book, and not lay down rules. Art is no longer art when it is shackled. As I have said before, the artist must always feel his liberty, but at the same time he must not keep on working with his eyes closed to material facts and

the results. Beginning with the white ground to the final touch, common sense dictates the use of one medium as far as possible, and that as we have seen should be the finest kind of oil. A solid, durable, homogeneous technic is only then possible. The sunlight must do the real finishing.

I believe I have already made plain the necessity for a dead coloring for flesh. The artist may find it opposed to his temperament or habits, but he will have to protect his work against the effect of time in some way that has this principle for its basis. The reader must bear in mind, and this I wish to make emphatic, that the sun cannot help a badly constructed picture; as, for instance, when a light picture is over a very dark ground, or light, cold, colored parts over dark, warm underpaint. The sun will surely expose the dark. I believe that Titian on rare occasions had to change the pictorial composition of a picture even when he had nearly finished. The method he adopted to avoid the " coming through "

of discarded forms was, when the subject permitted, to paint a new, thick dead color over what he had, and then proceed as before. In this way there was hardly any likelihood of the "coming through" of any undesirable first painting. I have tried to use such words in describing my meaning as would be intelligible to the greatest number. While even a moderately thick tone composed of, say, white, red, and black is in a sense transparent, and if used thinly is more so, it is very much more transparent if the white is left out. When semitransparent tones are spoken of, it means that a white and ochre, or other heavy-bodied, light-keyed color is a part of the tone described, and that it is applied quite thinly. A transparent veil is made of very much medium and a very small quantity of one or two colors of thin, dark body, like raw umber, raw sienna, ultramarine, burnt sienna, the madders, bone brown, ivory black, etc. The colors having the smallest subdivision of particles, like, for instance, madders, bone brown, ivory

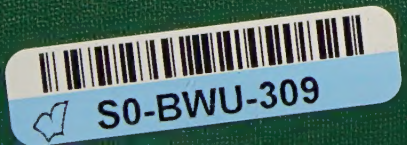
black, burnt terre verte, and ultramarine, etc., make the best veils or stains.

Conclusion

I do not think this book has been written in vain. I believe I shall make many converts to the theories herein set forth, even from the ranks of those who have been painting pictures. I hope to reach, and expect to influence for good, that great mass of new blood that is entering the ranks of the art workers every year. I sincerely hope, too, this work will be as the solid earth in their support as they first set foot on the threshold of fame.

(1)

THE END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